Med. Forum, Vol. 23, No.7 July, 2012 **ISSN 1029-385-X**

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Editorial

Editorial Reproductive Health Services and Family Planning

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In 1968 world leaders proclaimed that individuals had a basic human right to determine the number and timing of their children. About 44 years later, modern contraception remains out of reach for millions of women and men.

The unprecedented decrease in mortality began to accelerate in the more developed parts of the world in the 19th century and expanded to the entire world in the 20th century. By one estimate life expectancy at birth increased from 30 to 67 yrs between 1800 and 2005, leading to a rapid growth of the population: from 1 billion in 1810 to over 7 billion in 2010. The theme for this years' population day will be the recognition of the right of every person to attain universal access to reproductive health services.

For Pakistan July 11 2012 will bring several questions to answer. Pakistan is one of the largest growing countries in the world. In early 1994 Pakistan's population was estimated to be 126 million. At that time it was the ninth most populous country of the world however land area wise ranked thirty-second among nations.

Thus Pakistan has 2% of the world's population living on less than 0.7% of world's land. The population growth rate is among the highest, officially estimated as 3.1% per yr but privately thought to be closer to 3.3% by planner's involved in population programs.

Pakistan's problem with militancy, a fragile economy and natural disasters such as 2011 and 2010 floods have often been discussed, but an even greater threat may be posed by sheer number of people in the country.

According to official figure, the projected population for 2015 is 191 million, up from the current figure of170 million, making it the 6th most populous nation on earth. By 2050 it is expected to climb to the 4th place. This is bad news for a country that has struggled to provide its people with adequate food, heath care or education.

Malnutrition rates are high and are linked to 50% of infant and child death, there is only 1 doctor for every 1183 people and the literacy rate of 57% is among the lowest in south asia.

The root cause of overpopulation is unbalanced growth of population. In 3rd world country's basic awareness among common people is lacking which is the fundamental reason of overpopulation.

Poverty highly increases child mortality rate an individual citizen's poverty results in poverty of the whole country. In thickly populated countries life expectancy ratio is very low. As per the latest statistics Pakistan has 64.6 as life expectancy ratio of an individual whereas Japan has 82.3, the difference is very clear.

Family planning and population control programmes were started in 1950 and 1960 by private government institution. For yrs these in situations focused only on women as it was thought that family planning was the preserve of women therefore the audience was 100% women.

In 1947 the fertility rate was7.5per women in Pakistan and population growth rate was 4.5% per yr. in 1990 these were reduced to 5.1 and 2.9but this reduction is negligible. Presently 47% of Pakistan's population is under the age of 15.

More than 50 yrs have passed, millions of dollars have been spent, multiple resources have been exhausted and Pakistan still adds 4 million people to its population every yr. contraceptive use went from 6%in 1969 to 18% in 1995. Pakistan's average 6 children per family has barely fallen since 1960s and population density is 169/km.

Despite the grim picture we cannot afford to stop. Issues relating to family planning and reproductive health services are complex and interwined. Solutions also need to be comprehensive and integrated.

The most important actions include: expanding family planning concept beyond family planning to reproductive health services, generating positive attitude among public and political officials, organizing an effective media campaign, improve existing service quality, involving religious leaders to endorse the programmes and the role of donor agencies to continue their responsibilities to support a struggling economy and a young nation.

Original Article

An Experience of Thrombocytopenia in Children at Tertiary Care Hospitals Sukkur and Larkana

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ABSTRACT

Background: Thrombocytopenia is the most common cause of bleeding in children. Patients with thrombocytopenia may experience petechiae, epistaxis, gum bleeding, hematuria or gastrointestinal hemorrhage or intracranial bleeding, seizures and unconsciousness.

Objective: To determine the various causes, and clinical features of thrombocytopenia in children.

Study design: Prospective descriptive study.

Place and Duration of Study: This study was conducted at the Paediatric Departments of Shaheed Mohtrama Benazir Bhutto Medical University at Ghulam Muhammad Mahar Medical College Hospital Sukkur and Chandka Medical College Hospital Larkana, from July 2009 to July 2011.

Patients and Methods: This was a prospective descriptive study, include 200 patients1 to 12 year of age, presenting with fever, mucocutaneous bleeding and thrombocytopenia on peripheral smear at both departments. After consent a separate pro-forma was filled for each patient to record demography and data about various causes, clinical presentation and laboratory investigations.

Results: Out of 200 thrombocytopenic patients 128 (64%) were males and 72 (36%) females, majority in age group of under 10 years 154 (77%). The most common cause was the malaria in 50% of cases, followed by ITP 20 (10%), aplastic anemia and thalassemia (hypersplenism) in 7.5% respectively. Dengue fever and Typhoid fever was (5%) of cases. The other minor causes were severe malnutrition, acute leukemia, hemolytic uraemic syndrome 2.5% each. The most common clinical presentation was petechiae and echymosis in 92 (46%), followed by epistaxis and gum bleeding 68 (34%) of cases, subconjuctival hemorrhage in (14%) and hematuria in (08%) of cases. Unconsciousness was present in (9%) of cases. Anemia was found in most of patients (71%). Splenomegaly was present in 79 (39.5%) and hepatomegaly in 59 (29.5%) of patients. Platelets were less than 50,000/cmm in majority (60%) of patients.

Conclusion: The common cause of thrombocytopenia in febrile children was malaria, followed by ITP, Aplastic anemia and thalassemia (hypersplenism), Dengue hemorrhagic fever and enteric fever was less common. The other minor causes were severe malnutrition, acute leukemia, hemolytic uremic syndrome and lymphoma.

Key Words: Thrombocytopenia, mucocutaneous bleeding, Malaria, ITP, Aplastic anemia..

INTRODUCTION

Thrombocytopenia refers to a reduction in platelet count to <150x 10/ L in children. It is the most common cause of bleeding in children[1]. Patients with thrombocytopenia may experience petechiae, epistaxis, gum bleeding, hematuria or gastrointestinal hemorrhage or intracranial bleeding, seizures, unconsciousness. In patients with normal physical examination other than mucocutaneous bleedings the diagnosis of acute idiopathic thrombocytopenia can be made. Immune thrombocytopenia (ITP), formerly known as idiopathic thrombocytopenic purpura, is an acquired bleeding diathesis resulting from premature platelet destruction, reduced platelet production or a combination[2] Primary ITP is defined as isolated thrombocytopenia in the absence of an identified etiology or illness. Secondary ITP assumes the presence of a concurrent underlying disorder responsible for disturbed immune function leading to thrombocytopenia. The estimated incidence of ITP in children is approximately 1.9 to 6.4 cases per 100,000 per year [3] Patient with fever, anemia, splenomegaly or hepatomegaly , lymphadenopathy and thrombocytopenia may have malaria or other systemic infections or/ systemic lupus erythematosus, and malignancy[4]

Thrombocytopenia has been reported to be associated with malaria, with incidence ranging from 40.5%-85% [5, 6] with some studies reporting g a lower incidence in vivax malaria as compared to falciparum[7].A local study from Karachi reports thrombocytopenia in 72% of plasmodium vivax malaria cases [8]. Pancytopenia is a frequently occurring condition in children. It may be a transient event secondary to viral infection like parvovirus B19 or very serious condition like congenital bone marrow aplasia [9] Pancytopenia can also

result from either a failure of production of hematopoietic progenitor cells called aplastic anemia or peripheral destruction of cellular elements either due to infection, immune mediated damage or hyperslenism[10,11.12,13] Dengue hemorrhagic fever is one of the important cause of thrombocytopenia in children occurring in epidemics[14,15].As the list of causes of thrombocytopenia in children is long with varying degree of severity and out come is unpredictable in most of cases and sometimes serious complication can occur without proper management. Therefore this study was planned to find out various causes, and clinical presentation of thrombocytopenia in children.

PATIENTS AND METHODS

All 200 patients 1 to 12 years of age, presenting with fever, mucocutaneous bleeding and thrombocytopenia on peripheral smear at both departments were included. After consent a separate pro-forma was filled for each patient to record demography and data about various causes, clinical presentation and laboratory investigations, including complete blood counts, peripheral smear for malarial parasites by standard thick and thin films, and immunochromatography was used for confirmation of malaria cases .Other investigations to evaluate other causes of fever and thrombocytopenia including blood culture, bone marrow aspiration, antibody titers for dengue virus, prothrombin time, activated partial thromboplastin time, anti-nuclear antibody and anti-double stranded DNA, blood urea nitrogen and serum creatinine and cerebrospinal fluid, X-rays as needed in selected cases. Data was recorded on tabulated sheets and analyzed to find out the percentages of the causes and clinical features and platelets. The patients were managed according to the underlying causes.

RESULTS

Out of 200 cases of thrombocytopenia, 128 (64%) were males and 72 (36%) females, most of patients were in age group under 10 years 154 (77%) in table 5. The most common cause was malaria in 100 (50%) cases, followed by idiopathic thrombocytopenia 20 (10%) cases, aplastic anemia and thalassemia (hypersplenism) 15 (7.5%) respectively. Dengue hemorrhagic fever and enteric fever was 10 (5%) of cases. The other minor causes were severe malnutrition (2.5%), acute leukemia (2.5%), hemolytic uremic syndrome (2.5%) and lymphoma (1.5%), osteopetrosis (1%), DIC (1%), type 11 Von Willebrand disease (1%) as shown in table 1.

Among the malaria cases, the P. Falciparum was the most common species (45%), followed by mixed infection of P. Falciparum and P. Vivax (30%) and P. Vivax (25%) of cases as shown in table 2. The common clinical presentation was petechiae and echymosis in 92 (46%) of cases, followed by epistaxis and gum bleeding 68 (34%) of cases, subconjuctival hemorrahage in 28 (14%), hematuria in 16 (08%), and vaginal bleeding 3 (1.5%) of cases. Unconsciousness was present in 18 (09%) of cases.

Table No.1: Show the underlying causes in cases of febrile illness with thrombocytopenia

Cases	No of cases	%age
Malaria	100	50%
Idiopathic thrombocytopenia	20	10%
Aplastic anemia	15	7.5%
Thalassemia (hypersplenism)	15	7.5%
Dengue fever	10	5%
Enteric fever	10	5%
Severe malnutrition	05	2.5%
Acute leukemia	05	2.5%
Hemolytic uremic syndrome (HUS)	05	2.5%
Systemic lupus erythematosus (SLE)	05	2.5%
Lymphoma	03	1.5%
Osteopetrosis	02	01%
DIC	02	01%
Type 11Von Willebrand disease	02	01%
Meningitis	01	0.5%
Total	200	100%

Table No.2: Type of Plasmodium in Malaria cases with thrombocytopenia.

Plasmodium species	No of cases	%age
Plasmodium falciparum	45	45%
Plasmodium vivax	25	25%
Mixed (P . falciparum + vivax)	30	30%

Table No.3: Clinical features of 200 patients with thrombocytopenia

Clinical feature	No of patients	%age
Petechiae and echymosis	92	46%
Epistaxis and gum bleeding	86	34%
Haematuria	16	08%
Vaginal bleeding	03	1.5%
Subconjuctival hemorrhage	28	14%
Unconsciousness	18	09%
Slenomegaly	79	39.5%
Hepatomegaly	59	29.5%

Table No.4: Platelets count in patients with febrile illness.

Platelet counts (/dl)	No of patients	%age
<10,000	60	30%
>10,000-<20,000	30	15%
>20,000- <50,000	30	15%
>50,000-<100,000	40	20%
>100,000-<150,000	40	20%
Total number	200	100%

The anemia was found in most of patients 142 (71%). Splenomegaly was found in 79 (39.5%) of cases, where as hepatomegaly was found in 59 (29.5%) of patients as shown in table 3. The lymphadenopathy was found in 10 (05%) of patients. The complete blood picture reveal Hb in the range of 4g/dl to 11g/dl, majority of patients had hemoglobin lower than 8g/dl and thrombocytopenia in all cases, but most of patients platelets were less than 50,000 in (60%) of cases as shown in table 4.

Table No.5: Shows age and sex of 200 patients

Age in years	No of patients	%age
1-5 y	82	41%
6-10 y	72	36%
11-12 y	46	23%
Male	128	64%
Female	072	36%

DISCUSSION

Thrombocytopenia is one of the most common hematological disorder in children and had many causes. In our study of 200 cases of thrombocytopenia 128 (64%) were males and 72 (36%) females, similar to the local and international studies[16, 17, 18] Most of patients were in age group under 10 years 154 (77%).The most common cause was malaria in 100 (50%) cases followed by ITP 20 (10%) cases, aplastic anemia and thalassemia (hyperslpenism) 15 (7.5%) respectively. Finding of thrombocytopenia with anemia is an important clue to the diagnosis of malaria in patients with acute febrile illness[19] The thrombocytopenia with malaria was reported (69.18%) higher than our results by Ansari S et at[16], 72% by Jamal A et al [9], 85% by Beale P et al [6, 7].The second common cause was ITP 20 (10%) in our cases while 6.21% was reported by Kibria SG [18] and 15.7% was reported by Khan A et al[20] in his series of hematological diseases. The higher results was reported 32% by Jan MA[21]this is most probably due to selection of patients without fever. Aplastic anemia was the 3rd common cause in our cases 7.5% near to the (10.74%) reported by Kibria SG[18], in contrast to our results others had reported much cases 24% ,20.2%, 20%,14.5% [21, 20, 22, 24] respectively. It is more common in developing countries as compared to the industrialized world [23]. Hypersplenism was found in 7.5% of our cases near to the reported in other local study[21]. Dengue hemorrhagic fever was present in 10 (5%) cases but in contrast to our results 11.11%, and 17.6 % cases reported by Jamal A, et al[9] and Mahmood K et al[14].The other minor causes were severe malnutrition 2.5%, acute leukemia 2.5% hemolytic uremic syndrome 2.5% and lymphoma 1.5% of cases. Jan MA reported in his study acute leukemia 22%, lymphoma 4%, hemolytic uremic syndrome 4% respectively [21]. Among the malaria cases, P. Falciparum was the most common species responsible for thrombocytopenia 45% followed by mixed infection of P. Falciparum and P. Vivax 30% and P. Vivax 25% of cases. Similar to our experience P .falciprum was found most common 69.18% cases of malaria,[16] in contrast to our results Jamal A et al[9] reported 72% thrombocytopenia in cases of P vivax and 11% with P. Falciparum species An other study conducted by Patel U et al reported P. falciparum 47.5% and Pvivax 52.5% of species associated with thrombocytopenia cases respectively[19].

The common clinical presentation was petechiae and echyomosis in 92 (46%) of cases, followed by epistaxis and gum bleeding 68 (34%) of cases, subconjuctival hemorrhage in 28 (14%) of cases, hematuria 16 (08%) and vaginal bleeding in 3 (1.5%) of cases. Signs of bleeding were reported in 24% children and in 23% adults by Kuhne T et at[17]. Jan MA reported in his study that all patients presented with petechiae and ecchymosis, 11(34%) patients came with mild to moderate epistaxis, 9 (28%) with gingival bleeding, 3 (9%) with hematuria, 2(6%) with melaena and one girl came with bleeding per vagina[21].The anemia was found in most of patients 142 (71%) of cases in our series but in 38% patients with acute ITP by Jan MA[21], while Ayub T et al[22] in his study reported anemia in100% of cases aplastic anemia in children. Splenomegaly, hepatomegaly and lymphadenopathy were found 79 (39.5%), 59(29.5%) and in 10 (5%) of patients respectively in our series. Khan A et al[20] in his series of patients with malignancy reported various degrees of splenomegaly (79.2%), hepatomegaly (60.9%) and lymphadenopathy (39.1%) as well. The hemoglobin levels ranges from 4 gram/dl to 11gram / dl, in majority of patients hemoglobin was lower than 8g/dl (71%) and thrombocytopenia in all cases as reported in local literature[21], but most of patients platelets were less than 50,000 in (60%) of cases in our study consistent with the previous observations [16,21]

CONCLUSION

The common cause of thrombocytopenia in febrile children was malaria, followed by ITP, aplastic anemia and thalassemia (hyperslenism), dengue hemorrhagic fever and enteric fever in less common causes. The other minor causes were severe malnutrition, acute leukemia, hemolytic uremic syndrome and lymphoma.

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Original Article

Peadiatric Tracheostomy: An experience in Tertiatry Care Hospital

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ABSTRACT

Introduction: Tracheostomy is the surgical procedure originally described in 1st century BC. It is the life saving procedure when performed with appropriate indications and surgical technique. Tracheostomy in the pediatric population is a particularly hazardous procedure.

Study Design: Retrospective chart review

Duration & place of study: This study was conducted at the Peoples University of Medical & Health Sciences Hospital Nawabshah between 2004 to 2008.

Materials and methods: Retrospective review of pediatric tracheostomy done in emergency or elective procedure under general anesthesia or local anesthesia was under taken. Name, age, indications, time of decanulation and follow up were evaluated.

Results: 31 Pediatric patients had tracheostomies within study period. There were 19 males and 12 females. Age range was 2 months to 10 years. The most common indication of tracheostomy was upper respiratory tract obstruction due to traumatic causes (54.83%). 83.87% tracheostomies were done in emergency while 16.12% as elective procedure under general anesthesia or local anesthesia. Complications were encountered in 32.25%of patients. Most frequent complication was granulation tissue formation in the area around stoma (30%). Complication rate was high in patients below 2 years of age (63%) and in patients having emergency tracheostomy (73.9%). Decanulation was successfully done in all alive patients (87%). Overall mortality rate was 12.9%. There was no tracheostomy related mortality.

Conclusion: The indications for pediatric tracheostomy are changed from airway obstruction due to infection to trauma. Complication rate of tracheostomy is higher in younger age groups. Mortality and outcome of these patients depends primarily on underlying medical condition of the patient, otherwise pediatric tracheostomy is safe when performed in tertiary hospital settings.

Keys Words: Tracheostomy, pediatric, indications, complications, decanulation.

INTRODUCTION

Tracheostomy is the surgical procedure originally described in 1st century BC[1]. It is the life saving procedure when performed with appropriate indications and surgical technique[2]. Tracheostomy in the pediatric population is a particularly hazardous procedure. It is technically more demanding than adult tracheostomy, and carries a higher mortality and complication rate particularly with younger children and especially with pre- term infants[3]. There is how ever a changing trained in indications and out comes in the use of tracheostomy in children for airway management[4]. In the past the commonest indication was acute inflammatory airway obstruction, but in recent times prolonged intubation has become the commonest indication[5].

The aim of this retrospective study is to highlight our own experience with Tracheostomy out lining the common indications and outcome of patients with pediatric tracheostomy and compare our results with those from other centers in the world.

MATERIALS AND METHODS

A retrospective review of case notes was undertaken of children who underwent tracheostomy at ENT Department of peoples university of Medical & Health Sciences Hospital Nawabshah between 2004 to 2008. Names were obtained from our data base and from theater records. Notes were examined to find the age, and gender of the patients at the time of tracheostomy, indications, its complications while in situ and following the decanulation (if achieved).

All tracheostomies were performed either in emergency or electively in the operation theater under local or general anesthesia, using the standard technique. Horizontal skin incision was employed in all the cases. Most operation were performed by 1st author. Initial post operative care was in surgical intensive care unit, and there after in the ward with staff experienced in caring for tracheostomized child.

Our decanulation protocol is out lined below. The first step towards decanulation comes with formal airway endoscopy to determine the adequacy of the airway. If the airway appears satisfactory clinically, the tracheostomy tube is reduced in size. The child carriers are encouraged to occlude the tracheostomy tube for increasing periods of time, leading eventually to almost permanent occlusion. The tracheostomy tube is than removed under general anesthesia and an assessment of the airway is made my both surgeon and anaesthetist. Stridor can be heard easily by 6 listening through the

anesthetic tubing. If the airway is clearly satisfactory, the tube can be left out. Post- decanulation, the child is observed as an in- patient for 48 hours, and only allowed home after careful assessment by an experienced clinician.

RESULTS

Thirty one pediatric patients had tracheostomy with in the study period. There were 19 males and 12 females ranging in the age from 2 months to 10 years. 22.55% of the patient were less then 2 years and the commonest age of tracheostomy was ranging between 7-10 years.

The most common indication for tracheostomy was upper airway obstruction due to traumatic causes in 54.83% of the patients followed by upper airway obstruction due to neoplastic causes in 16.12% of cases (Table 1). High incidence of traumatic causes of upper airway obstruction was found between age ranging from 7-10 years, although the laryngeal pepillomas causing upper airway obstruction were recorded as most common indication for tracheostomy in first decade of life. 26 tracheotomies (83.87%) were performed as an emergency while 5 (16.12%) as elective procedure.

Table No.1: Indications for Tracheostomy (n= 31)

Sr. No	Indications	No of Patients	%age
01	Diptheria	02	6.45 %
02	Fire Arm Injuries Neck	02	6.45 %
03	F.B. Larynx	01	3.22 %
04	F.B. Tracheo Bronchial Tree	02	6.45 %
05	Lymphoma	03	9.67 %
06	Severe Head Injuries	10	32.25%
07	Server Maxillo Fascial Injuries	07	22.58%
08	Laryngeal Papilloma	02	6.45 %
09	Tetanus	01	3.22 %
10	Retropharyngeal Abscess	01	3.11 %
Total		31	100 %

Table No.2: Post- Tracheostomy Complications (n=10) (32.25 %)

Period	Complications	Frequency
Intraoperative	No Complication	---
Imdiate Complications	Bleeding Subcutaneous Emphysema	01 01
Early Complications	Tracheal Tube Obstruction Accidental Decannulation	02 02
Late Complication	Suprastomal Granulation Tissue Tracheo Cutenous Fistula	03 01

Table No.3: Duration of Decannulation (n=27)

Duration	No of Patients
1 Day- 1 week	12
2 weeks	06
3 weeks	05
4 weeks	04
Total	27 (87%)

Complications were encountered in 10 out of 31 trach-eotomies (32.25%). The most frequent complication was granulation tissue formation in the area around the stoma (30%) which required its removal before decanulation process. In children under one year, the complication rate was higher, affecting 63 % of the children. Post operative complication rate was significantly higher in emergency tracheostomy then in elective one (73.9% versus 26.1%).

Table 2 summarizes the complications of tracheastomy in this study population. The median period of hospital stay was 26 days (range:7-52days).

Decanulations were successfully done in all the patients who survived (87%). Time of decanulation is shown in table 3.

DISCUSSION

Tracheostomy is one of the more commonly performed surgical procedures in critically ill patients who require prolonged mechanical ventilation[6]. This procedure has become more common as demand for intensive care services increases[7]. It is a life saving procedure when performed with an appropriate indication and surgical technique[8].

In this review, there is male predominance of the patients who required tracheostomy. This may be due to their increased susceptibility to trauma which necessitated prolonged intubation and assisted ventilation. All injuries were from road traffic accidents specially involving motor cycles which are a major means of transportation in Pakistan. It has become recognized that the indication for pediatric treacheastomy have changed over the past couple of decades[9]. In the past infective conditions of upper respiratory tract like epiglottitis and laryngotra-cheobronchitis were major indications for tracheostomy but better handling of infections with the use of intubation and conservative management in ICU has reduced the incidence of these indications[10]. The most common indication for tracheostomy in our series was upper airway obstruction secondary to traumatic causes. This is in accordance with the other studies done in Malaysia[11]. Only 4 patients out of 31 patients (12.89%) underwent tracheostomy for upper airway infections in contrast 43 % of patients in Gaudet's 1978 study[12].

The surgical technique employed in all our patients was transverse skin crease incision in the operation theater. This method is preferred by us whether during emergency or as an elective tracheostomy because of

the advantage of better cosmetic results though, the vertical incision has the advantage of remaining in line of trachea and it is easy to perform and less vascular.

The rate of post operative complications in our study was (32.25%) which is higher than reported by others[13]. In other studies the complication rate between 6-66% have been quoted[14]. The reason for high rate of complications following tracheostomy in our studies may be because the majority of the tracheotomies in our patients were performed on emergency basis, which is comparable to other studies where post-tracheostomy complication rates were found to be significantly higher in emergency tracheostomy than in elective one[15,16].

The high rate of complications (63%) among the children aged below one year is attributed to the fact that tracheostomy in small children is challenging and technically more difficult due to small caliber of their larynx and trachea and therefore caries higher post operative complication rate. In the present study suprastomal granulation tissue is found to be the most common complication of tracheostomy. Similar findings are also reported by Fasunla etall[17]. It is late complication of tracheastomy which can be prevented by good surgical technique, sparing cricoid cartilage during dissection.

Tracheostomy decanulation was successfully carried out in 87% of the patients who survived which is almost similar to the study done by ChristopherKL[18]showing 82.5% decanulation accomplished successfully.

The overall mortality recorded in our series was 12.9%, which were due to underlying disease, although there was no mortality attributed to tracheostomy procedure itself. This reflects significant improvement in the skill of surgical procedure as well as the post operative management of these patients in our hospital.

Overall mortality rate was 4 (12.9%). There was no tracheostomy related mortality. Follow-up of majority of the patients after decanulation was uneventful, except one who had tracheo-cutenous fistula (3.22%). (Table 3).

CONCLUSION

The indications for pediatric tracheostomy are changed from airway obstruction due to infection to trauma. Complication rate of tracheostomy is higher in younger age groups. Mortality and outcome of these patients depends primarily on underlying medical condition of the patient, otherwise pediatric tracheostomy is safe when performed in tertiary hospital settings.

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Original Article

Etiological Agents of CSOM and its Sensitivity Pattern

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ABSTRACT

Objective: The present study was undertaken with the aim to detect bacteria and fungi as aetiological agent in CSOM and to see susceptibility pattern of bacterial isolates to different antibiotics and to determine the beta lactamase production by the bacterial isolates.

Study Design: Experimental Study.

Place and Duration of Study: This study was conducted in the department of Microbiology, Basic Medical Sciences Institute, JPMC, Karachi, during the period of August 1998 to February 1999.

Materials and Methods: During this period, 110 patients were seen, of them 62 were male and 48 were female with male to female ratio of 1.3:1. Two swabs were taken from each patients ear, one was put immediately in to Brain Heart Infusion (BHI) broth and the other was inoculated on Sabouraud Dextrose Agar (SDA) slant. BHI was incubated for 2-4 hours and subcultured on blood agar, chocolate agar and MacConkey's agar plates. The Chocolate agar was incubated in 5-10% CO_2 atmosphere in a candle jar and they were incubated for 24 hours at 37ºC. SDA slant was incubated for 14 days at 37ºC. Isolates were identified by Gram staining and then confirmed by biochemical test. Fungus growth was stained in Lactophenol Cotton blue (LPCB) and identified microscopically.

Results: Amongst bacterial isolates gram negative rods (41) and Pseudomonas aeruginosa (45) were predominant. 47 gram positive cocci were seen, of those 37 were Staphylococcus aureus. Fourteen fungal isolates were recovered, all of them were found to be Aspergillus species. Bacterial isolates were tested for β-lactamase production the drug sensitivity was noted by disc diffusion method on Mueller Hinton agar. Ciprofloxacin and Enoxacin emerged as the most effective antibiotics. Tobramycin also showed good results against gram negative rods and Pseudomonas aeruginosa. Chloramphenicol, Clarithromycin and Minocycline showed good results against Staphylococcus aureus. And other gram positive cocci. Drug sensitivity of the fungi was not done. Micro-organisms showed least sensitivity to Ampicillin and Cotrimoxazole.

Conclusion: It is concluded that to achieve the maximum benefits of antibiotics, we must use them with discrimination and with the understanding of microbial population and with the knowledge of their indications and limitations. The indiscriminate, haphazard and halfhearted use of antibiotics and poor follow up of patients causes more harm than good.

Key Words: Chronic suppurative otitis media (CSOM), Chronic otitis media with effusion (COME).

INTRODUCTION

Otitis media represents one of the most prevalent forms of disease and is more common in childhood[1,2]. Two distinct forms are recognized. Chronic suppurative otitis media (CSOM) is a recurrent or persistent bacterial infection of the ear[3]. Chronic otitis media is defined as inflammation of the middle ear that lasts longer than three months. It is distinguished by hearing loss, mucopurulent otorrhea and a chronic perforation of tympanic membrane[4]. Chronic otitis media with effusion (COME) is an unresolving inflammation of the middle ear cleft with no otorrhea. It presents with persistent hearing loss and a middle ear filled with thick mucus. The tympanic membrane is intact but markedly retracte[5].

CSOM remains one of the most common childhood chronic infectious diseases worldwide[6,7] . In CSOM the inflammatory process is slow and insidious in its course, tends to be persistent and very often destructive with sometimes irreversible sequelae[2,3,6,7,8]. The aerobic bacteriology of CSOM is widely studied. Pseudomonas aeruginosa and Staphylococcus aureus being found to be the most commonly associated organisms. Staphylococcus epidermidis may be the aetiological agent responsible for purulent otitis media in a small number of cases[10]. Several fungi are found as a cause of inflammatory reaction in the external canal, or blocking the canal and Aspergillus (niger and flavus) leads the list among the isolates[6,10,11,12].

This study was aimed to isolate the etiological agent of CSOM and COME are its susceptibility pattern in patients attending out door patient of ENT department.

MATERIALS AND METHODS

This study was conducted at the clinical material was obtained from 110 cases, they attended ENT outpatient Department, JPMC, Karachi with the complaints of chronically discharging ears. The study was approved

by Institutional Review Board of Basic Medical Sciences Institute and only consented patients were includes in this study.

Collection of samples: External ear canal was cleaned of cerumen and pus with a blunt curate when indicated. It was then swabbed with 70% alcohol and allowed to dry for two minutes[7]. The pus coming from the middle ear was collected by 'no touch technique' with a sterile swab with all aseptic precautions[8]. Two swabs were taken from each case. One swab was put into brain heart infusion broth, incubated for 2-4 hours at 37ºC, and then inoculated on blood agar, MacConkey agar (Oxoid Ltd, England) and Chocolage agar (Oxoid Ltd, England). The plates were incubated at 37ºC for 24 hours. The chocolate agar plates were incubated in a candle jar at 37ºC for 48 hours. Gram staining of all isolates was done and the organisms were identified by different biochemical tests.

The other swab was inoculated on Sabouraud dextrose agar ((Oxoid Ltd, England) slants and incubated at 37ºC. They were examined on alternate days for presence of growth. The isolates were identified by growth characteristics, and morphological details under microscope for nature of conidiophores and conidia. In cases, where the identification was difficult, slide culture was made to study further details for final identification. Species identification was not attempted. β-lactamase was detected by iodometric method.

Antimicrobial drug susceptibility: Antimicrobial susceptibility was performed on Muellar Hinton agar medium (Oxioid Ltd., England) using modified Kirby Bauer's disk diffusion method according to Clinical Laboratory Standard Institute (CLSI) guidelines. Antibiotic discs of Ampicillin(10ug), Aztreonam (30ug), Amoxil+clavulanic acid (20/10ug), Ceftazidime(30ug), Ciprofloxacin(5ug), Ceftriaxone (30ug), Chloramphenicol(30ug), Cephradine(30ug), Cefixime(30ug), Cotrimoxazole(1.25ug,23.75ug), Clarithromycin(15ug), Enoxacin(10ug), Gentamicin (10ug), Minocycline(30ug), Oxacillin(1ug), Polymaxin B(300ug), Piperacillin(100ug), Tobramycin(10ug), Vancomycin(30ug) Oxacillin (1ug) applied for detection of antibiotic susceptibility[14].

RESULTS

A total of 110 patients were included in the study, out of which 62 were males and 48 were females. The average age of males was 15.8±1.83 standard error of mean (SEM) over a range of 2-72 years and that of female was 18.98±1.88 over a range of 0.75-45 years. The female to male ratio was 1:1.13. The number of patients were predominant in the age group of 0-20 years.

Forty three patients had the duration of pus discharge, 43 patients had duration of 3-11 months, 53 had 1-5 years, 11 had 6-10 years and one each had 11-15 years, 16-20 years and 21-25 years.

The type and nature of otorrhea in 112 chronically discharging ears, was noted that 77 (68.7%) ears were actively discharging, 35 (31.2%) were wet. No dry ears were included in the study. Out of 112 ears the nature of pus discharge was purulent in 82 (73.2%) and 30 (26.7%) were mucopurulent.

Out of the 110 patients, 108 had unilateral ear infection, while only two patients had bilateral ear infection. Out of the total 112 swabs 104 (92.8%) were culture positive. A total of 150 bacterial and fungal isolates were recovered; 104 of 112 swabs (92.8%) were culture positive and 8 (7.1%) had no growth. The most common bacteria isolated were Pseudomonas aeruginosa (30%) followed Staphylococcus aureus (24.6%), Proteus species (13.9%), Klebsiella pneumoniae (4%), Staphylococcus epidermidis (3.3%) and Streptococcus pneumoniae (0.6%). Enterobacter) and Diphtheroids were present in 2% each. Streptococcus pyogenes (0.6%), Serratia marcescen (1.3%)s, Alcaligenes (1.3%) and Providencia (0.6%) .Forty seven percent of bacteria were recovered in mixed growth, while 52.9% in pure culture. Fungi were recovered in 14 (9.3%) cases and all of them were found to be Aspergillus species.

Table No.1: Prevalence of Various Bacteria in Monobacterial and Polybacterial Isolates

Organism	Mono bacterial Isolates	Poly bacterial Isolates	Total
Pseudomonas aeruginosa	25 (55.5%)	20 (44.4%)	45 (33%)
Staph.aureus	19 (51.3%)	18 (48.6%)	37 (27.2%)
Strep.pneumoniae	03 (75%)	01 (25%)	04 (2.9%)
Staph.epidermidis	-	05 (100%)	05 (3.6%)
Strept.pyogenes	-	01 (100%)	01 (0.7%)
Prteus mirabilis	7 (41.1%)	10 (58.8%)	17 (12.5%)
Proteus vulgaris	2 (50%)	2 (50%)	04 (2.9%)
Klebsiella	4 (66.6%)	02 (33.3%)	6 (4.4%)
E.coli	-	06 (100%)	06 (4.4%)
Serratia	-	02 (100%)	02 (1.4%)
Enterobacter	3 (100%)	-	3 (2.2%)
Alcaligenes	1 (50%)	1 (50%)	02 (1.4%)
Providencia	-	01 (100%)	01 (0.7%)
Diphtheroid	-	03 (100%)	03 (2.2%)
Total	64 (47%)	72 (52.9%)	136

Table No. 2: Prevalence of Beta Lactamase Producing Organisms in CSOM

Organism	β-lactamase Positive	β-lactamase Negative	Total
Staph.aureus	29 (78.3%)	08 (21.6%)	37
Pseudomonas aeruginosa	18 (40.0%)	27 (60.0%)	45
Klebsiella pneumoniae	03 (50.0%)	03 (50.0%)	06
Staph.epidermidis	03 (40.0%)	02 (40.0%)	05

Table No.3: Drug sensitivity pattern of commonly occuring bacterilal isolates in CSOM

Drug tests	Gram +ve bacilli (n=86)		Gram +ve cocci (n=47)		Total sensitivity %
	Gram –ve Enteric rods (n=41)	Pseudomonas species (n=45)	Staph. aureus (n=37)	Other Gram + cocci (n=10)	
Vancomycin	-	-	37 (100)	-	100
Ciproxin	31 (75.6)	42 (93.3)	26 (70.7)	9 (90)	81.2
Enoxacin	31 (75.6)	42 (93.3)	24 (64.8)	9 (90)	79.6
Aztreonam	28 (68.2)	36 (80)	-	-	74.4
Ceftazidime	29 (70.7)	39 (86.6)	18 (48.8)	7 (70)	69.9
Piperacillin	26 (63.4)	35 (77.7)	21 (51.6)	7 (70)	61.65
Tobramycin	14 (34.1)	39 (86.6)	18 (48.6)	5 (50}	55.6
Ceftriaxone	20 (48.7)	27 (60)	15 (40.4)	-	51.8
Clarithromycin	-	18 (48.6)	5 (50)		48.9
Gentamicin	19 (46.3)	23 (51.1)	14 (37.8)	-	47.3
Chloramphenicol	3 (7.3)	-	29 (78.1)	7 (70)	44.3
Oxacillin	-	-	15 (40.3)	-	40.5
Minocycline	5 (12.1)	4 (8.8)	21 (51.6)	7 (70)	27.8
Polymaxin B	2 (4.8)	20 (44.4)	-	-	25.5
Amoxil+clavulanic acid	8 (18.5)	-	10 (27)	3 (30)	21.8
Cephradine	-	-	7 (18.9)	1 (30)	21.8
Cefixime	14 (34.1)	4 (8.8)	4 (10)	6 (60)	21.03
Ampicillin	0	-	0	2 (20)	2.2
Cotrimoxazole	0	0	0	1 (10)	0.7

Table No.4: Ddrug Sensitivity Pattern of Pseudomonas Aeruginosa (n=45)

Drug tested	Sensitivity
Ciproxin	42 (93.3%)
Enoxacin	42 (93.3%)
Ceftazidime	39 (86.0%)
Tobramycin	39 (86.0%)
Aztreonam	36 (80.0%)
Piperacillin	35 (77.7%)
Ceftriaxone	27 (60.0%)
Gentamicin	23 (51.1%)
Polymyxin B	20 (44.4%)
Minocycline	4 (8.80%)
Cefixime	4 (8.80%)

The pattern of bacterial isolates were both polybacterial and few were monobacterial. The detail is given in table 1. Out of total 136 bacterial isolates 53 (38.9%) were beta lactamase producing bacteria (BLPB). Majority of Staphylococcus aureus (78.3%) were BLPB, 40% of Pseudomonas aeruginosa, 50% of Klebsiella pneumoniae, and 60% of Staphylococcus epidermidis were also found to be beta lactamase producers. Table,2. Out of 37 Staphylococcus aureus isolates 15 (40.54%) were methicillin resistant.

Staph aureus, Pseudomonas aeuroginosa and Aspergillus spp were most common pathogens causing CSOM. Ciprofloxacin Enoxacin have shown mostly susceptible antibiotic against Gram negative bacilli and Minocycline and Clarithromycin were effective against Gram positive cocci. Table 4,5.

Table No.5: Drug Sensitivity Pattern of Staphylococcus Aureus (n=37)

Drug tested	Sensitivity
Vancomycin	37 (100.0%)
Chloramphenicol	29 (78.3%)
Ciproxin	26 (70.7%)
Enoxacin	24 (64.8%)
Piperacillin	21 (56.7%)
Minocycline	21 (56.7%)
Clarithromycin	18 (48.6%)
Tobramycin	18 (48.6%)
Ceftriaxone	15 (40.5%)
Oxacillin	15 (40.5%)
Gentamicin	14 (37.8%)
Amoxicil clavulanic acid	10 (27.0%)
Cephradine	7 (18.9%)
Cefixime	4 (10.0%)

The antibiotic sensitivity in gram positive and gram negative bacteria is shown in table 3. There were a total of 136 bacterial isolates, 47 gram positive cocci, 96 gram negative rods and 3 diphtheroids species.

There were a total of 86 Gram negative and 47 Gram positive isolates. Ciproxin showed sensitivity in 73 Gram negative and 35 Gram positive isolates. The total sensitivity in 108 (81.2%). Enoxacin showed the similar pattern in Gram negative rods and in Gram positive. 33 isolates were sensitive. The overall sensitivity was 79.6%. Ceftazidime was sensitive in 68 Gram negative and 25 Gram positive isolates. The total sensitivity was in 93 (69.9%) isolates.

The commonly used drugs, Cephradine 21.2 %, Ampicillin 10% and Cotrimaxazole has shown 0.7% susceptibility against gram positive rods.

DISCUSSION

Chronic suppurative otitis media (CSOM) is a persistent and insidious disease that often leads to destructive changes and irreversible sequelae. Since the disease is very common and often overlooked or treated haphazardly, many complications may occur. For this reason the present study was planned to see the prevalence of bacteria and fungi causing CSOM, their susceptibility pattern, and beta lactamase production. It was hoped that such a study would give a guideline to the clinicians to select appropriate antibiotics with clinical correlation.

We studied the prevalence of different micro-organisms in CSOM irrespective of type of tympanic membrane perforation and our study is in line of agreement with other studies. The most common pathogens found in our study were *Pseudomonas aeruginosa* (30%) and enteric Gram negative rods (27.3%). Amongst the Gram positive isolates *Staph. aureus* was the most predominant isolate (24.6%) with *Staph. epidermidis* (3.3%), *Strep. pneumoniae* (2.6%) and *Strep. pyogenes* in few cases. The organisms recovered in the present study were 64 (47%) in pure culture, 72 (52.9%) in mixed growth. Amongst the fungi three (21.4%) were pure culture and 11 (78.5%) were in mixed growth with bacteria. The present study showed, 92.8% positive cultures

In a multicentre study carried out in Karachi by Anwarus Salam in 596 consecutive ear swabs specimens, Staph. aureus was present in 40.4%, *Pseudomonas* in 29.6%, Aspergillus in 6.2% and *Candida* in 3.1%,14.4% of swabs were culture negative[11].

In a study carried out at Gomal University D.I. Khan, the causative organisms of CSOM were found to be Pseudomonas aeruginosa (37%), Staph. aureus (27%), Strep. pyogenes (18%), Proteus (15%) and E.coli (3%) [13]. Munir lodhi et al, found Staphylococcus aureus and pseudomonas aeruginosa more common in CSOM cases in Multan in patients under 15 years age. The CSOM cases were more common in children and prevalence reducing with increase of age. This pattern of decrease in infection rate with increase of age is same as in our study. In our study Ciprofloxacin and Enoxacin are most susceptible drugs as compare to penicillin group of drugs in pseudomonas and other gram negative rods. Same results were also found by other researchers in children[14,15,16,17]

CONCLUSION

It is concluded that to achieve the maximum benefits of antibiotics, we must use them with discrimination and with the understanding of microbial population and with the knowledge of their indications and limitations. The indiscriminate, haphazard and halfhearted use of antibiotics and poor follow up of patients causes more harm than good.

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Original Article

Allergic Bronchopulmonary Aspergillosis and Bronchial Asthma, A Forgotten Partners

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ABSTRACT

Objective: To evaluate the incidence of ABPA (Allergic Broncho Pulmanary Aspergillosis) in Asthma.
Study Design: Observational Study
Place and Duration of Study: This study was conducted at Pulmonology Department, Bolan Medical College Quetta from 2005-2010.
Materials and Methods: Forty Cases both male and female were included in this study. A detailed medical history, complete physical examination, recent posteroanteral and lateral chest X.Ray were obtained. Where ever possible previous X-Ray chest were also obtained for comparison and to see the fleeting shadows. Laboratory help included absolute eosinophil count, total serum IgE, Sputum for fungal hyphae and spirometry.
Results: Among forty (40) cases 90 % were asthmatics between 11-40 years of age. In 92 % of cases the radiological findings were fleeting in nature. 70 % were misdiagnosed and treated as pulmonary tuberculosis. All 40 case had raised (70.5 x 10^9 perlitre) absolute eosinophil count in peripheral blood. Sputum eosinophilia was detected in 77 % of cases and fungal hyphae were isolated in 47 % cases bronchospy and serum IgE levels were also abnormal but performed in only 25% cases.
Conclusion: ABPA must be considered in asthma patients having unexplained , fleeting or persistent chest radiographic shadows.
Key Words: Allergic Bronncho Pulmanry Aspergillosis (ABPA), Aspergillosis, Fumigatus.

INTRODUCTION

Aspergillus Fumigatus is a fungus that grows on dcad and decaying organic matter in the environment and whose spores are present ubiquitously in the air[1]. Allergic bronchopulmanary aspergillosis is a hypersensitivity lung disease, caused predominantly by the ubiquitous fungus aspergillosis fumigatus[2]. Aspergillus Fumigatus is associated with a number of pulmonary conditions including ABPA, mycetoma, invasive aspergillosis, extrinsic allergic alveolitis and bronchial asthma[3]. Proximal bronchiectasts is also a very common sequalae of ABPA. The disorder needs to be detected before bronchiectasis has developed because the occurrence of bronchiectasis is associated with poorer out comes[4].Diagnosis of ABPA is usually difficult and majority of the patients are misdiagnosed as pulmonary tuberculosis due to suggestive symptoms of cough, sputum, fever, breathlessness and fleeting shadows on chest radiograph. Due to lack of proper diagnostic laboratory facilities for fungal infections these patients end up having multiple courses of anti-tuberculous therapy and antibiotics by different doctors without adequate clinical and radiological improvement.

This study reveals forty cases of ABPA seen over a period of five years (2005-2010) in a personal series. The purpose of this study is to evaluate the pattern of this relatively un-common problem in our clinical practice and also to provide guidelines for the proper diagnosis and management.

MATERIALS AND METHODS

The majority of the patients with the suspected diagnosis of ABPA were picked from the Department of Chest Medicine, Bolan Medical collage Quetta. A few patients were also included from a private clinic. A detailed medical history was taken, a complete physical examination was performed, radiological and laboratory investigations were obtained. Where-ever possible previous X-ray chest were also obtained for comparison and to see fleeting shadows. Laboratory investigations included TLC, DLC, ESR, absolute eosinophil count, total serum IgE, sputum for fungal hyphae and spirometry.

All the patients were treated with oral steroids.Majority of them received oral prednisolone 40 mg daily for 4 to 6 weeks. Response to treatment was assessed on the basis of clinical improvement, radiological clearance and fall in absolute eosinophil count in peripheral blood.

RESULTS

A total of 40 cases of ABPA were seen over a period of five years. The age and sex distribution is shown in Table 1 and 2. Overall the ABPA was found to be more common in females and 90% of the patients were in the age group 11 to 40 years. Majority of the patients presented with marked overlap of multiple symptoms like cough, sputum, breathlessness, wheeze and fever. Characteristic mucus plugs which are hard, rubbery and yellow to brown lumps were seen in 50% cases. Haemoptysis and chest pain were relatively less common (Table 3) Past medical history revealed bronchial asthma in 36 cases (90%) and atopy in

31 cases (77.5%) whereas 28 cases (70%) were misdiagnosed as pulmonary tuberculosis and received un-necessary single or multiple courses of anti-tuberculous therapy. Clinical examination of respiratory system revealed features of asthma (90%) consolidation (32.5%) bronchiectasis (22%) and collapse / fibrosis (10%).

Table No.1: Age Distribution in 40 Cases

Age group	Number	Percentage
0-10	Nil	0%
11-20	9	22.5%
21-30	17	42.5%
31-40	10	25%
41-50	3	7.5%
51-60	Nil	0%
61-70	1	2.5%
Total	**40**	**100%**

Table No.2: Sex Distribution in 40 Cases

Sex	Number	Percentage
Male	17	42.5%
Female	23	57.5%
Total	**40**	**100%**

Table No.3: Presenting Complaints in 40 Cases

Symptom	Number	Percentage
Cough	40	100%
Sputum	37	92.5%
Shortness of Breath	34	85%
Wheeze	33	82.5%
Fever	33	82.5%
Haemoptysis	9	22.5%
Chest Pain	5	12.5%

Table No.4: Radiological Presentation in 40 Cases

Nature	Number	Percentage
Consolidation	27	67.5%
Infiltrate	26	65%
Bronchiectasis	23	57.5%
Fibrosis / Collapse	11	27.5%
Fleeting Shadows	37	92.5%

Features on chest radiograph included multiple abnormalities with significant overlap in all three radiological zones (Table 4 and 5). Thirty seven cases (92.5%) showed characteristic fleeting shadows which are hallmark of ABPA. In 14 cases (35%) lesions were seen in perihailar area. Blood examination showed raised TLC in 22 cases (55%) but absolute eosinophil count was raised in all 40 cases indicating eosinophils replacing other differential leucocytes (Table 6). Spirometry was performed in all cases and 31 cases (77.5%) revealed features of obstructive airway pattern. High sputum eosinophil count was seen in 31 cases (77.5%) but the yield of sputum for fungal hyphae was relatively low (47.5%). Bronchoscopy was performed in 10 cases (25%) showing hyperemic, oedematous mucosa and rubbery brownish mucous plugs causing bronchial obstruction in lobar and segmental bronchi. Serum IgE levels were checked in only 10 cases (25%) and was found to raised.

Table No.5: Distribution of Radiological Sites (Zones) in Cases

Zones	Cases	Percentage
Single zone	5	12.5%
Double zone	14	35.0%
Triple zone	21	52.5%
Total	40	100%

Table No.6: Range of Absolute Eosinophil count

Range	No. of cases	Percentage
500-1000	22	55%
1001-2000	14	35%
2001-3000	1	2.5%
3001-4000	2	5%
4001-5000	1	2.5%
Total	40	100%

All 40 cases were treated with oral prednisolone 40 mg daily in addition to symptomatic therapy for asthma and superadded infection (Table 7). Total duration of daily treatment with oral prednisolone was 4-6 weeks in 33 cases (82.3%) after initial 4 weeks of daily 40 mg prednisolone dose was tapered and stopped in the following 2 weeks. Two cases failed to tolerate oral prednisolone more than 2-3 weeks whereas in five cases treatment has to be continued for 7-10 weeks. Those patients who received prednisolone for less than 4 weeks showed significant clinical improvement. This was confirmed by clearance of radiological shadows in repeat chest radiograph and fall in absolute eosinophil count to normal level in peripheral blood film.

Table No.7: Treatment in 40 Cases

Drug	Number	Percentage
Steroids(oral)	40	100%
B-Agonist	33	82.5%
Theophyline	6	15%
Inhaled Steroids	20	50%
Antibiotics	12	30%

During follow-up 10 cases (25%) had relapse. Majority of these developed relapse between 6-12 months. Three patients had 2-3 episodes of relapse but all were treated successfully with 4-6 weeks duration of oral prednisolone. None of cases required long term maintenance steroids.

DISCUSSION

Aspergillosis in one the Ist mycosis to be recognized in humans[5]. aspergillus fumigatus is the most frequently implicated pathogen causing ABPA and other lung diseases[6]. ABPA, Ist described in 1952 by Hinson and Coworkers is caused by hypersensitivity and immunological reaction to A. Fumigatus involving the bronchial wall and peripheral part of the lung [7]. in vast majority of cases ABPA is associated with bronchial

asthma but it can occur in non-asthmatic patients[8-9]. The identification of allergic fungal sinusitis (AFS) is much more recent than that of allergic broncho pulmonary aspergillosis (ABPA) and may still be incomplete and controversial[10].In our study 36 cases (90%) were asthmatics and 31 cases (77.5%) had history of atopy. Another study by Bromley and Donaldson[11] has suggested that asthmatic lung has an environment which is more conducive to the adherence and persistence of A. Fumigatus spores than the normal lung. ABPA usually develops in atopic individuals in their 20s – 30s and relatively more common in females[12]. In our study 57.5% cases were females and 90% of the patients were in the age group 11 to 40 years.

Diagnostic criteria of ABPA include follows[13]

- Asthma (in the majority cases).
- Chest radiographic abnormalities.
- Elevated total serum IgE.
- Fungal hyphae of A. Fumigatus in sputum.
- Positive Skin test and precipitating antibodies.

Radiographic changes in ABPA may be transient or permanent[14]. transient changes are fleeting in the form of diffuse pulmonary infiltrates, lobar or segmental collapse and fluffy sonsolidations in any part of the lungs. Permanent radiographic abnormalities include loss of lung volume, fibrosis and bronchiectasis particularly in upper lobes. Similar changes are also seen in pulmonary tuberculosis causing major confusion in the diagnosis.

In our study 28 cases (70%) were misdiagnosed as pulmonary tuberculosis, out of these 14 cases were given single course, 10 had two curses and 4 cases had three courses of un-necessary anti-tuberculous therapy.

In addition to radiological findings, absolute eosinophil count was found very useful in the diagnosis as all the cases had raised count (Table 6). Sputum containing fungal hyphae is produced intermittently by patients in ABPA. In our study approximately 50% cases were positive for fungal hyphae. Total serum IgE levels in ABPA are generally markedly above the normal range and higher than those found in uncomplicated asthma[15]. we were able to perform total serum IgE levels in only 25% cases. Bronchoscopy can be useful both for diagnostic and therapeutic purpose particularly for removal of mucus plugs in lobar and segmental collapse. Positive skin test and serum precipitating antibodies to A. Fumigatus are found in majority of cases but due to lack of availability were not performed. The mainstay of treatment of acute exacerbation in ABPA is oral corticosteroids (Prednisolone 40-60 mg daily) and patients having recurrent episodes may require maintenance dose of 10 mg daily on long term basis [16,17]. transient radiographic abnormalities usually clear within 4-6 weeks, whereas permanent radiographic changes may clear partially. In our study more than 80% cases received oral prednisolone 40 mg dose for 4-6 weeks and showed good response. The optimal control of asthma should be achieved with inhaled corticosteroids and bronchodilators. Inhaled coricosteroids do not prevent pulmonary infiltrates bud do not appear to encourage fungal growth within lung[18].Early recognition allows treatment with corticosterorids, which are effective but may be required indefinitely[19]. The trial of treatment with oral antifungal agents like ketoconazole and imidazole are in progress. Those can reduce concentration of specific antibodies with improvement in asthmatic symptoms but prolonged treatment and potential toxicity limits their use[20].

CONCULUSION

ABPA is relatively rare but serious complication of bronchial asthma. The disease usually follows chronic course with recurrent episodes of pulmonary infiltrates and lobar or segmental collapse. The aim of our study was to establish a diagnostic and therapeutic criteria for cases of ABPA. Although similar radiographic abnormalities can be seen in sarcoidosis, allergic alveolitis and cystic fibrosis but in our community pulmonary tuberculosis is the main differential diagnosis. We hope that by establishing appropriate early diagnosis of ABPA, majority of the patients can be saved from un-necessary anti-tuberculous therapy.

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CORRIGENDUM

It is to clarify that the department of Dr. Zafarullah Khan at Sr.No.2 in the article "Diurnal variations in the levels of Progesterone during late pregnancy" appeared in our Journal Medical Forum Monthly, October, 2011 (page 28) may be read as Endocrinology instead of Entomology.

Editor in Chief
Medical Forum Monthly,
Lahore.

Original Article

Effect of Heavy School Bags on the Health of Children

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ABSTRACT

Objective: To evaluate how much the backpacks of elementary school children weigh and the percentage of body weight represented by them. To determine the attribute of school backpacks and key out the methods of carrying backpacks.

Study Design: Cross sectional study.

Materials and Methods: This is a cross sectional study conducted on school girls and boys of age between 5-15 years during April 2008 to Sept 2008 in Karachi. Sample of 660 students was taken. Students were interviewed with structured pre-tested questionnaire asking about: How they travel to & from school (walk/transport)? How they carry bags? If they have pain due to bag carriage? Where they feel pain (shoulder/neck/back)? Do they consult doctor for pain? How many days they remain absent from school due to pain? How they get relief from pain?

Results: School bags averaged weight is 4.9 kg. Related to body weight of the students, school bag represented an average weight of 18.00% .The maximum value for bag weight relative to body mass was 48%.About 89.1% of students carried bags weighing more than 10% of their body mass. Bag surface area ranges from 87 cm in the first grade to 2322 cm in the 7th grade. The maximal ratio of Bag surface area to student's trunk area was 266.27.The proportion of students who experienced bodily pain due to back pack carriage was 67%.Regarding intensity of pain; 40.5% students had complain of mild pain, 17.4% students had complain of moderate pain, while 10.8% had severe intensity of pain. The average bag weight of students relative to their body weight who felt pain was 19.00% of their body weight while the average bag weight of students relative to their body weight who did not felt pain was 17.21% .Our research analysis shows that 7% students were absent from school due to pain.6% of students visited doctor with complain of pain.

Conclusion: School students of Karachi 5-15 years old seem to carry substantial backpack loads, which represent more than 10 percent of children's body weight.

Key Words: school students, backpack, Karachi, pain, transport.

INTRODUCTION

Almost in registered 150,000 Elementary schools of Pakistan 27.5 million children and about 9000 registered schools of Karachi 2.5 million children carry book bags on their shoulders 5-6 days per week for the entire academic year. Though these bags weigh significant weight putting these dedicated children in discomfort, unfortunately this issue was not yet noticed. In a normal routine schedule these children carry huge piles of books and other stationary items most probably packed and fitted in an improper way. Irrespective of the maneuvers including for how long these heavy backpacks being carried by these children, design of a bag itself including number of straps its surface area whether wheeled or not, method of wearing, the books themselves contribute a considerable weight to these back packs causing bodily pains.

Keeping in mind the weight and the bodily pains caused by these heavy backpacks it is not false to say that these overloaded back packs are responsible for distortion of the posture including lost of the natural curve of the spine and rounding of the shoulders[3,4]. If such risk persists over many schooling years, it can cause chronic back problems[2,5,7] that may extend into adulthood. A research indicates that back packs loads represent a significant percentage of child's body weight[1,2]. A heavy school bag, especially when it is slung over one shoulder, can lead to muscle strain distortion of natural curve of spine and rounding of the shoulders[3,4]. In fact backpack, weight measure as a percentage of body weight was effective in predicting back pain in adolescents[7] Most of the students have a backpack big enough to hold books for 7-8 periods. Text books are not light which means they may be carrying 20-40 pounds on their back. Although this way of carrying books on shoulders by these innocent children is in front of entire society, it remained un- noticed by us it might not show any harmful aspect but we cannot ignore what our young generations is complaining about. We carried out a research by keeping in mind this statement which was revealed and later proven by the previous researches that the children should carry no more than 10% of their body weight 5,[6,8-10]. Another research reveals an alarming danger associated with children's improper backpack use and problems like LBP (lower back pain), posture deformities, decrease in growth spurt, increase number of falls, and even pulmonary dysfunction have been noticed in school going children[4]. Previous researches have been shown

that child back being damaged because of:
1)School bag that weights more than 10% of child's weight.2) Holding the bag in one hand by its strap.3) Carrying the bag over one shoulder.4) An incorrectly packed backpack. 5) An incorrectly fitted backpack.6) Carrying too many copies, books and other school supply. In Pakistan, the extent of this problem has not been yet investigated, though anecdotal evidences for the heavy loads of school bags have been surfacing in the media for some times. Therefore, the purposes of the present study were to investigate the percentage of body weight represented by school bags, to determine the size of school bags relative to trunk size, and to identify the methods of carrying book bags by elementary school children in Karachi.

MATERIALS AND METHODS

Type of Study: Cross sectional study by using simple random sampling technique.
Duration of Study: Three months.
Data Collection: Students were interviewed with structured pre-tested questionnaire asking about: How they travel to & from school (walk/transport)? How they carry bags? If they have pain due to bag carriage? Where they feel pain (shoulder/neck/back)?Do they consult doctor for pain? How many days they remain absent from school due to pain? How they get relief from pain?
Physical Examination: Physical examination of students was also done: Body weight was measured without shoes in kg by using bathroom scale. Standing height was measured barefooted in cms by using unstretchable measuring tape. We also measured biacromial width & trunk height in cms. Trunk area was calculated by multiplying biacromial width with trunk height.BMI was also determined.
Examination of Bag: Weight of school bags was measured in kg by bathroom scale.The height & width of school bags were measured using unstretchable measuring tape. Total area of school bags then calculated as its length multiplied by its width
Universe of Study: This is a cross sectional study conducted on school girls and boys of age between 5-15 years during April 2008 to Sept 2008 in Karachi. Convenient sampling technique was selected. Study was conducted in schools of following towns of Karachi,Bin qasim town,Baldia town,Gulshan town, Gulberg town,North Nazimabad town,Korangi town.
Sampling Technique: Our target was student's b/w grade 1 to 7.Sample of 660 students was taken and 87 from grade 1, 118 from grade 2, 99 from grade 3, 108 from grade 4, 102 from grade 5, 71 from grade 6 & 75 from grade 7. Written consent was taken from principals of selected schools.
Inclusion Criteria: Students in b/w age 5-15 years.
Exclusion Criteria: Students below 5 & above 15 year of age were excluded from the study.
Analysis: Data entry & statistical analysis were performed using SPSS Program version 10 and 16.Data were reported as mean & standard deviation or as percentages.

RESULTS

A total of 660 school students were tested spanning from 1st to 7th grade. Among them, girls were 53% and boys were 47%.

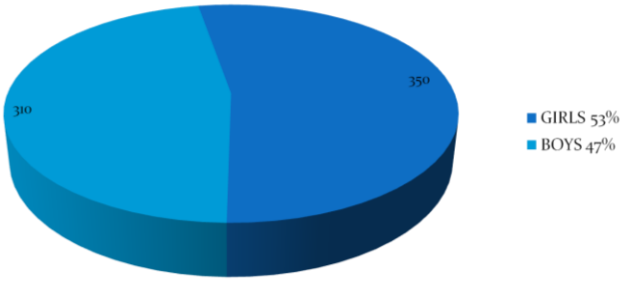

Figure No.1: Gender

We have divided the students in 3 age groups; Ist group includes 23% students of age 5-8 yrs ,2nd group includes 49.5% students of age 9-11 yrs,3rd group includes 27% students of age 12-15 yrs.

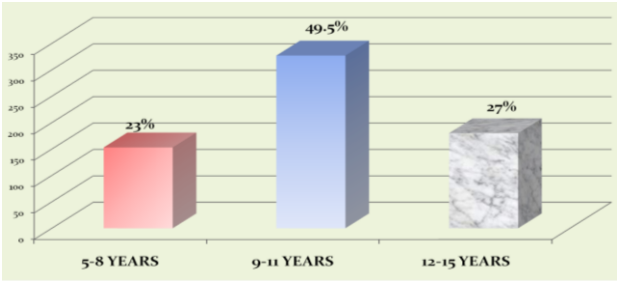

Figure No.2: Age Grouping

The study findings revealed that the majority 72.7% of the students walk to and from school and only 27.3% travel by transport.

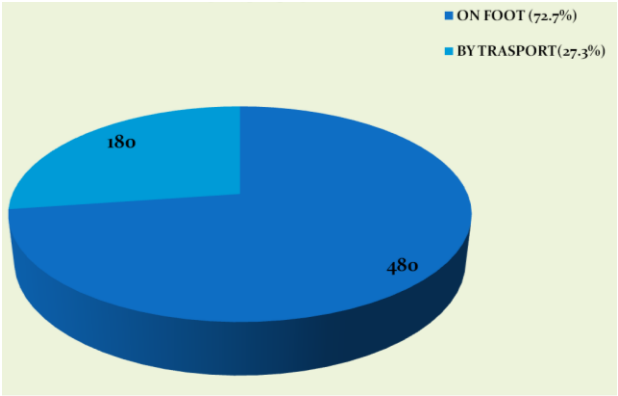

Figure No.3: Transport

School bags averaged weight is 4.9 kg. The maximum weight recorded for school bags was 13 kg. Related to

body mass of the students, school bag represented an average weight of 18% .The maximum value for bag weight relative to body mass was 48%.

Table No.1: Valid & age with standard deviation

Questions Asked	Valid % age	Standard deviation
Transport		
By transport	27.3	0.446
On foot	72.7	
Bag Type		
Single Strap	80	0.407
Double Strap	19	
Trolley bag	1	
Feeling Pain		
Yes	67	0.707
No	33	
Site of Pain		
Neck	17.2	0.499
Shoulder	96	
Lower back	9.2	
Intensity of Pain		
Mild	40.5	0.660
Moderate	17.4	
Severe	10.8	
Absent from School	7	0.626
Days Absent		
Once	3	0.498
Twice	3	
Thrice and more than thrice	1	
Frequency of Visits to Doctors Office in last Three Months		
Once	3	0.538
Twice	2	
Thrice	1	
More than thrice	1	
Pain Relieved		
By itself	56	1.136
By taking rest	35	
By taking medications	9.37	

About 89.1% of students carried bags weighing more than 10% of their body mass ,63.3% carried more than 15%,32.9% carried more than 20% ,10.8% carried more than 25% ,6.1% carried more than 30%,2.7% carried more than 35% and 1.2% carried more than 40%.

There was slight variation in bag dimensions among school graders. Bag surface area ranges from 87 cm in the first grade to 2322 cm in the 7th grade. The maximal ratio of Bag surface area to student's trunk area was 266.27.

80% of students used double strap bags, 19% of students used single strap bags and only 1% of students used trolley bags.

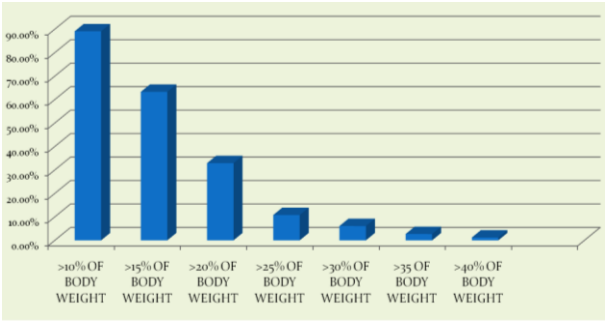

Figure No.4: Percentage of Bag weight relative to Body Weight

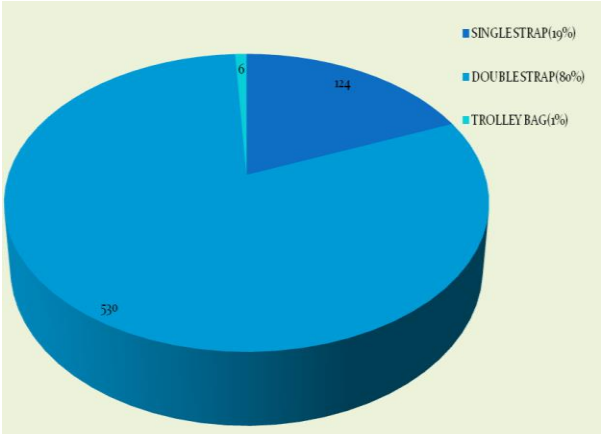

Figure No.5: Bag Type

Regarding the body weight,73% boys and 74.3% girls were normal, 24% boys and 24.3% girls were underweight and 2% boys and 1.4% girls were obese

Regarding body height, 76.5% boys and 74.1% girls were normal, 4.9% boys and 6% girls were tall and 18.6% boys and 19.8% girls were stunted.

The average bag weight of students relative to their body weight who felt pain was 19.00% of their body weight while the average bag weight of students relative to their body weight who did not felt pain was 17.21%

Our research analysis shows that 7% students were absent from school due to pain. Among them 3% students were absent once, 3% for 2 times and 1% for 3 times and more than 3 times in last 3 months. Pain in 56% students relieved by itself, in 35% relieved by rest and in 9.37% relieved by taking medication.

Table No.2: T-test for equality of means

Bag weight related to body weight	T-test for equality of means			
	T	DF	Sig.(2 tailed)	Mean Difference
Equal variances assumed	2.628	652	0.009	1.5661
Equal variances not assumed	2.653	429.491	0.008	1.5661

Table No.3: T-Test for Std. deviation and Std. error mean

Feeling of Pain	Total no of students	mean	Std. deviation	Std. error mean
Bag wt relative to body wt ;				
Yes	441	19	7.2041	0.3431
No	213	18	7.0118	0.4804

6% of students visited doctor with complain of pain. Among those students who visited doctors in last 3 months 3% visited once, 2% twice,1% thrice and 1% more than thrice.

Table No.4: Independence Sample Test

Bag wt relative to body wt	Levene's test for equality of variances	
Equal variances assumed	F	Sig.
Equal variances not assumed	0.141	0.707

DISCUSSION

The research has revealed some interesting findings of school children of age 5-15 years carry loads on their shoulders averaging nearly 18.23% of their body mass. Moreover, school bags, relative to the student's trunk area, were shown to be oversized, especially for the younger students. The American Chiropractic Association (ACA) recommends limiting the back packs weight to no more than 10% of the child's body mass. The present investigation showed that about 67% students were experiencing bodily pain. Pain was felt more frequently by girls 71.1% and less frequently by boys 61.3% and those carry bag on one shoulder 18.8%.Findings from Puckree et al who reported more pain in children carrying bags on 2 shoulders. Other researchers found that time spent carrying the back pack is associated with back pain the most.Our findings indicate that 80% of the students carried their backpacks on two shoulders. Moreover, Approximately 1% of the students in our study used wheeled bags. Present report demonstrated that 27.3% of the children travel to and from the school by transport. School students of Karachi 5-15 years old seem to carry substantial backpack loads, which represent a significant percentage of children's body mass. Almost 89.1% of the students in this study carried backpack weighing more than 10% of their body mass. Majority of the students carry their bags on 2 shoulders. 2/3rd of the student's experienced bodily pain; mostly on shoulders due to school bag carriage.81 visits were paid to Doctors because of these complains in last 3 months meaning 324 visits/year only by these 660 students. We will extrapolate these findings it will become 1.2 million visits by students of Karachi only & 13.5 million visits by students of Pakistan to doctor/year. If we estimate the financial implication of these visits, estimating an expense of Rs: 50/= per visit. It comes about Rs. 675 million per year. If we estimate that only 1/4th of this amount are being expensed on import of medicines, it comes to about Rs.169 million per year.

Recommendations

Backpack weight is limited to no more than 10% of child's body mass.Students should avoid carrying their bags on single shoulder and have backpacks properly packed and fitted.It was further noticed in our study that percentage of underweight students are significantly high (24% students weight fall less than 5th percentile in growth chart) as well as percentage of stunted students were also high (19% boys & 20% girls fall below 5th percentile in growth chart.)Keeping in mind that all these students were from private schools meaning poverty/under nutrition is not the major contributor. This high percentage of underweight and stunted students indicate a major mismatch b/w the standard weight and height of our children as compared standards given to the growth charts of Harvard.We recommend a broader study to compare these standards.

Acknowledgement

By the grace of ALLAH, we have successfully completed our research without any difficulty.We highly appreciate and are thank full for the efforts of Amna Abbasi, Arifa Saleem,[1]Maria Siddiqui,[1]Jawairia Afzaal,[1]Javeria Zahid,[1]Hina Akhtar,[1]Quratulain Yousuf,[1]Roofia Baig,[1]Saba Aslam[1]
Shireen Arif,[1] Sumaiya Khalid,[1]Syeda Sadia Sajid,[1] for their efforts in all stages of research especially in collection of data. We are especially grateful to Prof. Dr.Nazeer Khan, Miss Salma Arzoo Khattak, Miss Sumaira Naz and Mr.Qamar Ahmed for helping us in analysis. Lastly we are especially thankful to the school principals, parents and children for their full co-operation.

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Original Article

Morbidity Associated with Obesity in Pregnancy

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ABSTRACT

Obesity is associated with increased risk of illness and disability. It is one of the leading preventable causes of death in the World. Major maternal complications associated with obesity include diabetes mellitus, hypertension, deep vein thrombosis, respiratory diseases, infections and birth defects and even decreased fertility. Economic consequences of obesity are operative delivery and its complications, prolonged hospital stay.

Objective: 1) To review maternal and fetal morbidity associated with obesity.
2) To observe the mode of delivery in obese pregnant female.

Study Design: Observational study (cross section)

Place and Duration of Study: This study was conducted at Khair-un-Nisa Hospital affiliated with Fatima Memorial Hospital from April 2011 to October 2011.

Patients and Methods: 60 patients were enrolled in this study. Women with BMI more than 30 were included in our study. BMI was calculated by pre-pregnancy weight or weight during first trimester at booking within outpatient department. Patients with history of chronic hypertension, diabetes mellitus were not included in the study.

Results: The prevalence of obesity is increasing in our young population. In this study mean age is 30 years ± SD 91.25. Most of the patients had BMI 33 ± SD 2.80. Hypertension, diabetes, urinary tract infection 18.33%,congenital abnormalities 16.7%. Most of the patients ended on LSCS 30.5 %, wound infection noted in 11 patients 18.3%. During normal vaginal delivery 4 patients 6.7% had third degree prenieal tear and 11 patients had post-partum hemorrhage. Fetal complications were birth asphyxia in 8 (13.3%) neonates and shoulder dystocia in 2 (3.3%) babies.

Conclusion: Obesity is a public health problem because of its prevalence, cost and health effects. Maternal obesity carries significant risk for mother and fetus. Risk increases with degree of obesity . Feto-maternal morbidity associated with it, can be prevented by creating awareness and preventing overweight and obesity in adults and children.

Key Word: Obesity, Body Mass Index (BMI), lower segment caesarean section (LSCS).

INTRODUCTION

Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and increased health problems.[1] Abnormal accumulation of body fat usually 20% or more over an individual ideal body weight and is associated with increased risk of illness and disability, it is one of the leading preventable cause of death in World.

On average, obesity reduces life expectancy by six to seven years. A BMI of 30-35 reduces life expectancy by two to four years, while severe obesity (BMI>40) reduces the life expectancy ten years. [2]

There are many adverse effects of obesity on pregnancy outcome. These include increased risk of early miscarriage and recurrent miscarriages, thromboembolic disease, increased neural tube defects and heart defects on fetus, gestational hypertension, preeclampsia, gestational diabetes, sleep apnea, non-alcoholic fatty liver diseases, intrauterine fetal death, increased risk of caesarean section and post-operative complications such as infections (urinary tract infection, wound infection, and endometritis), hemorrhage and deep vein thrombosis.[3]

Maternal obesity is also known to be associated with increased rate of operative delivery and shoulder dystocia. Obesity among pregnant women is becoming one of the most important women health issue.

PATIENTS AND METHODS

This study was conducted from April 2011 to October 2011 at khair-un nisa hospital which is tertiary care hospital. Women who were pregnant with BMI more than 30 included in our study.

60 patients were added in this study meeting the inclusion criteria. These women were observed during whole ante natal period, delivery and even six week post-delivery regarding mother and infant complications. Proper clinical examination, basic laboratory investigations, and imaging were carried out.

BMI (Body Mass Index) was calculated by dividing the subject weight by the square of height in meters (Kg/m^2). In pregnancy BMI is calculated using pre-pregnancy weight if this is unknown then weight measurement at booking is used. The most commonly

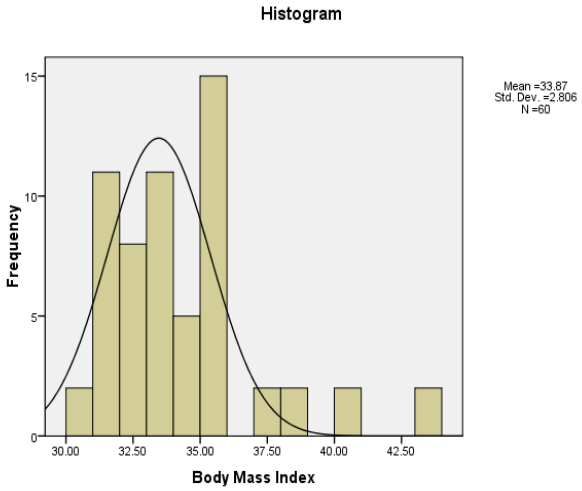
used definition, established by the world health organization (WHO) in 1997 and published in 2000.[4]

BMI 18.5 – 24.9	Normal Weight
25.0 – 29.9	Over weight
30 – 34.9	Class one obesity
35.0 – 39.9	Class two obesity
> 40	Class three obesity

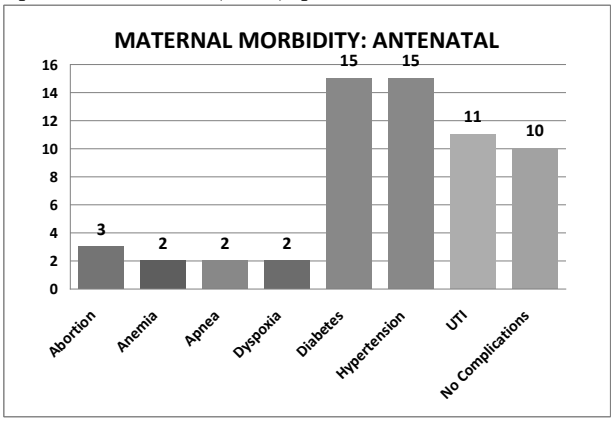
Clinical data was collected and assessed at SPSS version 17.

RESULTS

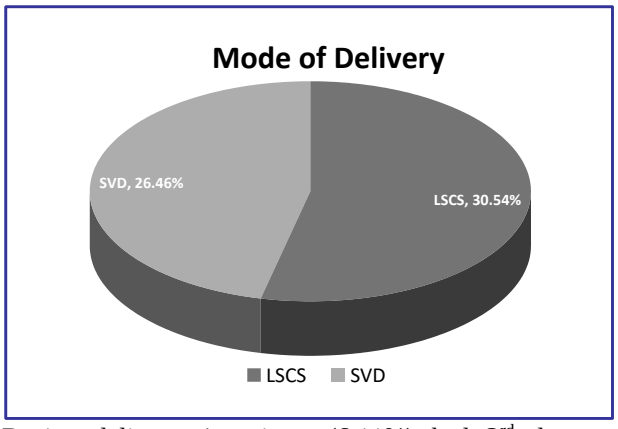
Prevalence of obesity is increasing in our young population. In this study mean age is 30 years, most of them had BMI 33 ± SD 2.8.



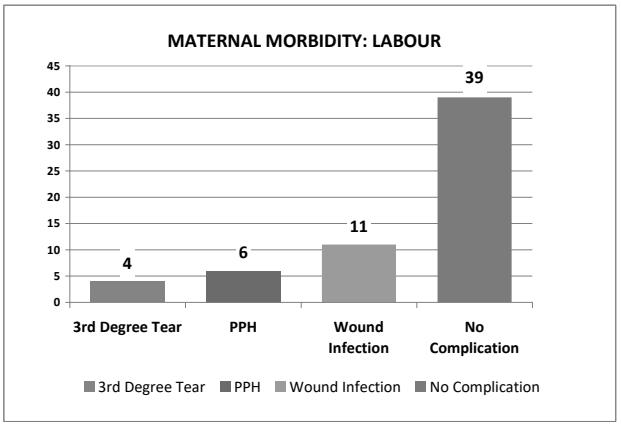
Maternal morbidity associated with obesity was hypertension, diabetes in 15 patients (25%) each. Urinary tract infection noted in 11 (18.33%) patients. Apnea, anemia in 2 (3.3%) patients.



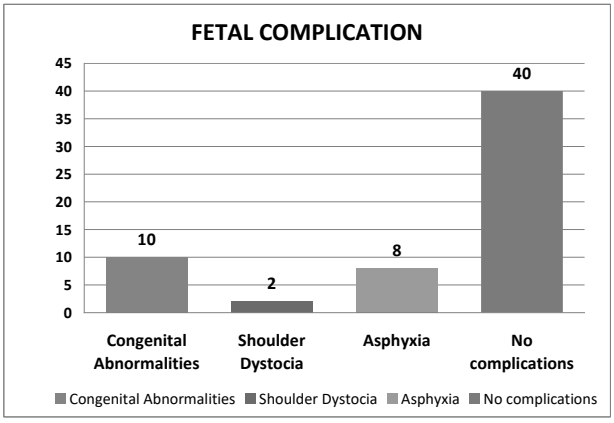
Most of these patients delivered by lower segment caesarean section 30.54% and by spontaneous vaginal delivery (26.46%).



During delivery 4 patients (6.11%) had 3rd degree prenial tear and 6 (10%), patients had post-partum haemorrhage (PPH), 11 patients (18.3%) had wound infection.



Among fetal complications congenital abnormalities during antenatal in 10 patients (16.7%). 2 (3.3%) babies had shoulder dystocia due to increased infant weight 4.8 kg. 8 (13.3%) neonates had birth asphyxia.



DISCUSSION

The world health organization (WHO) predicts that over-weight and obesity may soon replace more traditional public health concerns such as under nutrition and infectious diseases are the most significant causes of poor health. Public health efforts seek to understand and correct the environmental factors responsible for the increased prevalence of obesity in the population. We should look at changing the factors that cause excess food energy consumption and inhibit physical activity.

Before 20th century, obesity was rare. [5] In 1997 WHO formally recognized obesity as a global epidemic. In 2005 WHO estimated that at least 400 million adults were obese with higher rate among women than men.

It was initially considered a problem only of high income countries, but obesity rate is rising worldwide and affecting both the developed and developing countries. These increases have been felt most dramatically in urban settings than rural settings. [6] The only remaining region of the World where obesity is uncommon is sub-Saharan Africa.

The increased risk of complications in obese women during pregnancy and delivery emphasis the need for the specialists and health care workers involved in treating obese women to be aware of the risk, complications and their management.

Approximately 1-3% of women, compared to 17% of obese women, develop gestational diabetes mellitus during pregnancy in LinnY er al study. [7] But in our study 25% patients had gestational diabetes as Asians are more prone to develop diabetes than Europeans.

Studies conducted by andreasonKR, anderenML and schantzAL show that maternal obesity is an important factor for gestation hypertension. [8] Another study conducted by Castrol according to the risk of preeclampsia typically doubles with each 5-7 Kg/m^2 increase in pre-pregnancy BMI. Obese pregnant women have a 14-25% incidence of preeclampsia. [9] The results of our study is comparable with overall literature that 25% patient develop hypertension during pregnancy.

A study was conducted by UshaKTS, hemmadiS, bethelJ,EvansJ they found an increased incidence of urinary tract infection in obese women but the incidence of wound infection is not increased as previously observed. [10] But in our study 18.3% incidence of urinary tract infection and wound infection was 18.3% also.

Obesity is an independent risk factor for caesarean section. [11] It increases the caesarean section rate over 20% compared to nearer 10% for normal weight women. [12] In recent years caesarean section rate has risen to record level of 46% in China and 25% in many Asians and European countries, Latin America and United States. [13] which is quite comparable to our study having 30.54% caesarean section rate.

Obese women tend to have higher rate of post-partum hemorrhage, the increase incidence of cesarean section among obese women has been implicated as the causatual factor. Obese patients with BMI >30, who had a vaginal delivery had a greater than 500 ml blood loss compared to those with a BMI of 20-30 Kg/m^2 . [14] In our study PPH is seen in 10% of patients. In post-partum period obese women are found to have prolonged hospital stay for more than 4 days as compared to non-obese women who had hospital stay of about 2 days as shown in Nuthala paty FS, Rouse DJ.[14]

For every incremental unit increase in BMI the risk of neural tube defects increases by 7%. [15] Hyperinsuli-nemia is a strong risk factor for neural tube defects but even after the adjustment of hyperinsulinemia, obesity continues to be a modest risk factor. [16]

CONCLUSION

The health and economic impact of rising obesity rate in women of reproductive age, is of significant public health importance as obesity is an important modifiable risk factor for adverse pregnancy outcome. Helping women to understand the risk associated with obesity and working with them for motivation to decrease obesity and its risks. Awareness needs to be created on the importance of normal weight before conception.

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Original Article

Perception of Euthanasia in Students of Public Medical University in Karachi

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ABSTRACT

Introduction: Euthanasia is emerging as a grave issue in medical and biomedical fields. The fate of Euthanasia however, swings like a pendulum with terms like 'merciful intervention' at one pole to 'endangering human rights' on the other. The ongoing debate has lead to many surveys with significant results showing the upward increase in acceptance of either performing or securing intentional actions resulting in termination of life.
This study is carried out to know about the perception regarding Euthanasia.

Objectives: The aim is to perceive understanding towards Euthanasia in medical students and its usage in their future practices.

Study design: Qualitative descriptive study design.

Place and Duration of Study: This study was the Department of Community Medicine, SMC, Karachi from April 2011 to September 2011.

Materials and Methods: Sample size is 400 collected from Dow University of Health sciences, Karachi and sampling design is simple random. Evaluation tool is structured questionnaire based on 3 case studies with the consideration of ethical issues.

Results: In the data analysis 48.25% endorsed the act of euthanasia in certain cases while 40.25% strongly disagreed with it. Remaining 11.5% supported the cause only when the patient is willing. 13% individuals opted for actively easing the suffering of a patient in Case-1 while 11% agreed to prescribe a lethal drug/dosage in Case-3 of voluntary euthanasia. A staggering 40% ordered removal of life saving equipment in Case-2 of a vegetative patient as passive euthanasia. The leading cause for supporting euthanasia was increased availability of equipment and resources at a 48% while 62% of the discord was due to belief in life/death being a matter for the Lord only. When faced with a choice, 39% found ethnic discrimination more abusive of a doctor's oath than 23% of those who choose Euthanasia.

Conclusion: To conclude, significant numbers of medical students support Euthanasia especially passive euthanasia. Religious beliefs are of serious concerns while gender also plays a small part in the decision making.

Keywords: Euthanasia, Medical students, Perception, Case-study.

INTRODUCTION

Muslims are against euthanasia. They believe that all human life is sacred because it is given by Allah, and that Allah chooses how long each person will live. Human beings should not interfere in this. Life is sacred. Allah decides how long each of us will live "Do not take life, Which Allah made sacred, other than in the course of justice." Quran 17:33. Muslims belief of euthanasia is negative yet being medical professionals the emerging issues on the subject needs to be addressed so the young medical community is well equipped to deal with the upcoming challenges and innovation in managing situations demanding euthanasia in accordance to religion and biomedical ethics; and not be crippled by enabling factors of Liberalism. Managing death was never new to the field of medicine, in-fact many advocated the importance of being able to deal with it, to accept the whole process as something unequivocal end. The fate of Euthanasia however, swings like a pendulum with terms like 'merciful intervention' at one pole to 'endangering human rights' on the other. Euthanasia itself is derived from the Greek language, loosely translated to 'good death'. The first recorded usage of the term was by historian Suetonius in describing the death of Emperor Augustus as 'dying quickly and without suffering'. The House Of Lords Select Committee on Medical Ethics defines euthanasia as "a deliberate intervention undertaken with the express intention of ending a life, to relieve intractable suffering."[1] Euthanasia is of three types, active euthanasia is when a doctor or medical attendant deliberately and without prior acknowledgement renders such actions to terminate a patient's life. Passive euthanasia refers to removal of life assisting mechanisms/drugs of a dependent patient with complete erudition of the terminality ensuing from the taken step. Voluntary euthanasia has the patient taking charge and requesting assistance from his/her attending physician of a lethal kind.[2] Although fraught with controversy, the act of euthanasia has not been entirely unsuccessful in being legalized. In April 2002, the Netherlands became the first country in the world to legalize euthanasia. If a physician followed the strict legal lines implicated with the said law, committing voluntary euthanasia or assisted suicide would not lead to any suit[3]. This was eventually followed by Belgium legalizing physician assisted suicide in September 2002; soon after which relative researches showed the type of Belgians opting for euthanasia were often terminal cancer patients burdened with excruciating pain. Incidents of non-terminal individuals adjudicating

for it were negligible[4,5]. Another notable ally in this field is the country of Switzerland, making assisted suicide a crime if, and only if, the motive wasn't untainted. A recent collaborator is the government of India after sanctioning the practice of passive euthanasia on March 2011 for terminal, vegetative patients[6].

The trajectory of time and increase in turbulence of human life has slowly but gradually brought upon a change of view regarding euthanasia. Over decades, countenance has become in-vogue, with more and more individuals acknowledging and promoting the existence of euthanasia[7]. The ongoing debate has lead to many surveys with significant results showing the upward increase in acceptance of either performing or securing intentional actions resulting in termination of life. According to a compendium of physicians, many would consider accommodating a mortal patient commit suicide in certain situations[8]. Another research conducted among populace-dwelling adults had 19% Americans admitting that, if terminal and in pain, they would ask their attending physician to prescribe a lethal drug/dosage[9]. A majority of 80% British public surveyed supported the recent changes in law legalizing euthanasia[10]. While some of the inclination would be more appropriately due to fear of pain and accompanying depression[11], many abiders cite autonomy as a reason, stating human rights also encompasses the verdict of one's own death[12]. Others exemplify the added leverage of availability of resources and life-saving equipment with the advent of patient's license pertaining to death thus improving the chances of those who aren't yet to perish[11].

MATERIALS AND METHODS

Sample size is 400, out of which, 200 were collected from Sindh Medical College and 200 from Dow Medical College, Dow University of Health sciences, Karachi. In each institute, 100 were given each to fourth year medical students and final year medical students with gender distribution in each year being 50-50 for male-female. Sampling design is simple random.

Evaluation tool is structured questionnaire based on 3 case studies with the consideration of ethical issues. A questionnaire compromising of 11 questions and 3 case studies were distributed and collected, with informed consent. Initial questions were to quickly assess the level of knowledge before proceeding with the three cases, each case dealing with one specific type of euthanasia. Culmination was with queries regarding support or dissent along with reasons.

RESULTS

The compiled and tabulated purports of collected data are as follows:

Euthanasia- No Big Secret:

Initial 5 questions judged the level of awareness in medical students ranging from the exact meaning of the act of Euthanasia to understanding the different forms associated with it. Participants were also asked to identify from a list of countries those that had legalized the act.

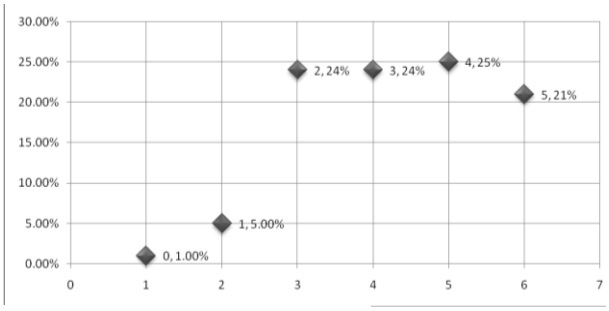


Figure No.1: Awareness Scoring

Out of a maximum 5, 71% correctly answered 3 questions or more while only 6% couldn't answer most of the questions. A total of 21% ticked all the correct answers.

Case Study 1: A total of 3 different scenarios were provided, each of which represented one of the 3 types of Euthanasia i.e. active, passive and voluntary. The candidates had four different options to choose from including counseling, giving false hope, the act itself and one other variable.

Active Euthanasia: A 65 year old woman has been diagnosed with end stage pancreatic cancer and given 2 months to live. Her pain from multiple skin secondaries and bone secondaries is getting harder to control, becoming excruciating.

A majority of 67% opted to counsel the patient as compared to only 13% who decided to administer a lethal drug/dosage. 10% decided to take an altogether different route and induce an expensive coma regime for the rest of her time while remaining 10% preferred to twist the truth.

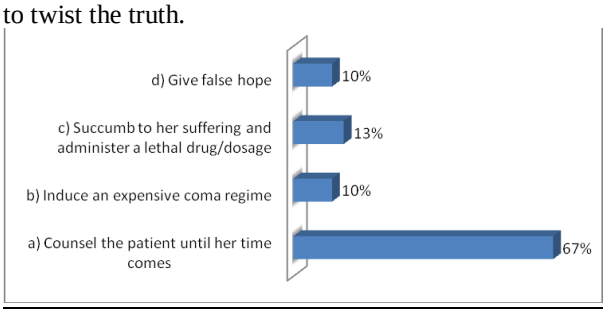


Figure No.2: Case No.1

Case Study 2: Passive Euthanasia

You were assigned a case of a 40 year old man who was in a car accident and has since then been on artificial life support. His ECGs are flat and there is no response to stimulus. The relatives are confused as the machinery is putting a financial as well as emotional toll on them.

48% of the candidates opted to counsel the family while reporting the matter to concerned authorities while roughly the same amount at 40$ decided to remove the

life saving machinery and let the patient progress to certain death. 8% were over all unsure and decided to refer the case to a colleague while only 4% had to skim with the truth and give false hope.

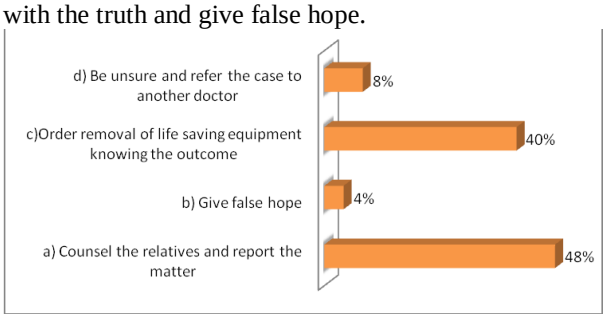


Figure No.3: Case No.2

Case Study 3: Voluntary Euthanasia

A former mentor of your approaches you with a unique wish. He was diagnosed with and is suffering from Motor Neuron Disease. His condition has deteriorated to such an extent that he finds it difficult to talk or walk, his swallowing has become impaired and there is difficult in breathing. He has come to you for help ending his misery.

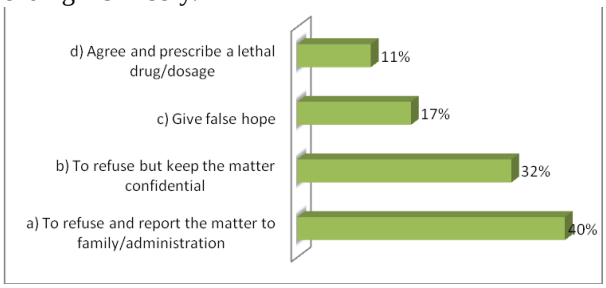


Figure No.4: Case No.3

Of those who refused, 40% decided to report the matter as well while 32% respected the mentor's privacy and kept the matter obscure after refusing. 17% surmised giving false hope as the best option while a close minority of 11% set forward to prescribe a lethal drug/dosage for the patient.

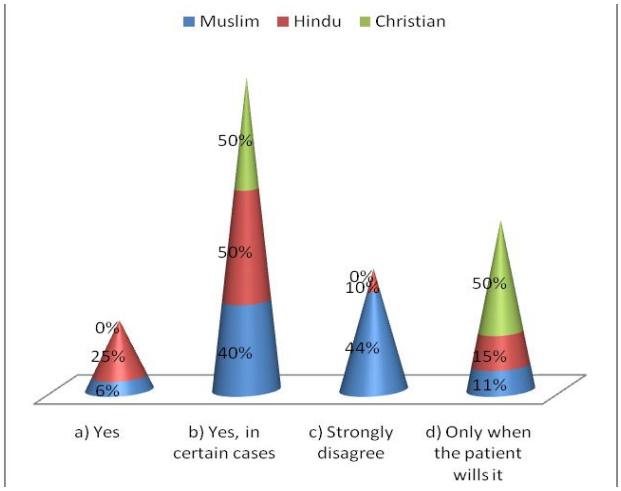


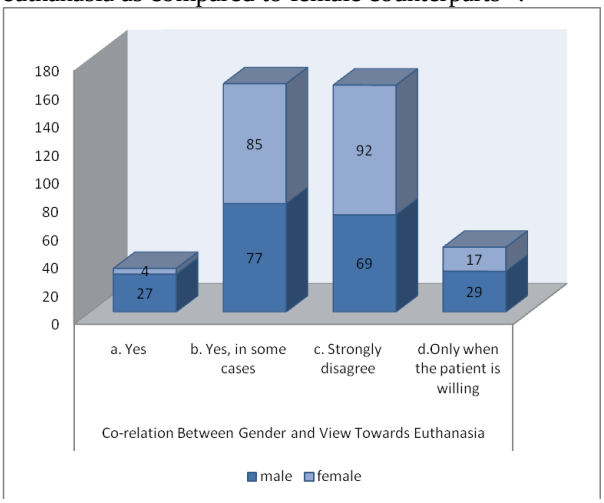
Figure No.5: Religious VS Euthanasia

Euthanasia for the Religious:

After calculating the percentages of religious sets questioned, it was concluded that Muslims in general strongly opposed euthanasia at 44% as compared to 10% Hindus. 25% Hindus simply answered 'Yes' to euthanasia in contrast to only 6% Muslims.

Euthanasia According to Gender Views:

An equal number of male and female students were targeted to get an even distribution. As garnered by results, male showed a slight more inclination towards euthanasia as compared to female counterparts[14].



Out of the 48.25% students who answered either a) or b) hence supporting Euthanasia, 54% of them were male while 46% were female. From the 40.25% who vehemently went against Euthanasia, 43% were male while a significant majority of 57% was females. From the 11.5% who would opt for the act with the consent of the patient, a preponderance of them were male at 63% with females at only 37%.

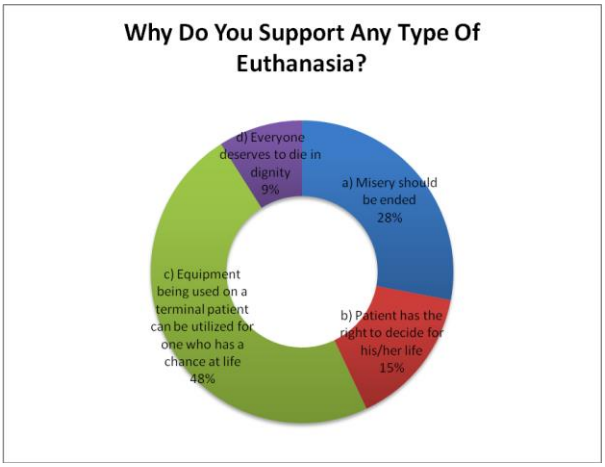


Figure No.7: Why do you support any type of Euthanasia?

Euthanasia- Not a Bad Choice:

From those who chose Euthanasia suitable to advocate, a majority of 48% postulated the availability of

equipment/medicines/finances to those patients who still had a fighting chance and the terminal not to become a burden hence suffer poor medical care[15]. 28% were of the view that misery should be ended and one must not suffer excessive pain[16].

15% were of the belief that human autonomy must be maintained consequently one should be able to decide for his/her death[17]. The remaining 9% were of the credence that every individual deserves to die in dignity and maintain their self-respect[18].

With regard to the type of method preferred half of the proponents casted their votes for Passive Euthanasia at 50% while 17% were inclined for voluntary euthanasia only. Active Euthanasia was supported by 11% while the remaining 12% agreed with all three types.

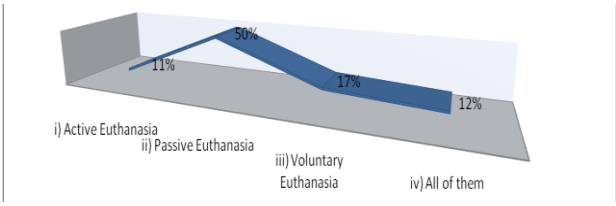


Figure No.8: Which Type of Euthanasia do you prefer?

Euthanasia- Still a Long Way to Go:

A significant majority of 62% showed their variance with Euthanasia was due to religious belief of life and death being a matter to be only handled by the Lord Himself[19]. The remaining were almost equally distributed amongst unreliability of patients in pain 10%[20] with advances in biotechnology to be used to extend life at 16% and finally, as a form of criminal killing at 12%.

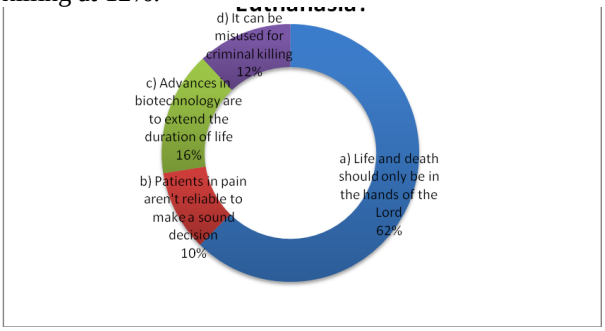


Figure No.9: Why are you against any form of Euthanasia?

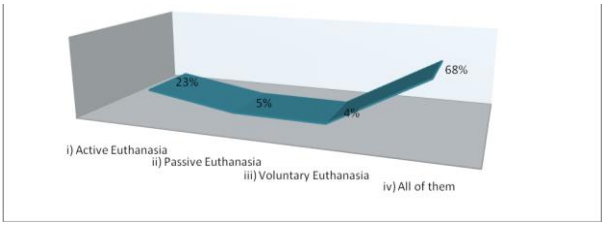


Figure No.10: Which type of Euthanasia are you most against?

When asked the least favorite form of Euthanasia, a large essence of 68% was conflicting with the idea of any type while 23% were contrary to Active Euthanasia. 5% were against Passive Euthanasia while 4% against Voluntary Euthanasia.

Euthanasia-Not That High A Price To Pay:

When the participants were asked to identify the one matter they considered most contradicting with the oaths and responsibility of a doctor, a majority of 39% affiliated with. Ethnic discrimination. Breaking confidentiality came at second with 26% respondents opting for it while Euthanasia was a close third at 23%. Giving false hope was deemed the lesser of these evils with 12%.

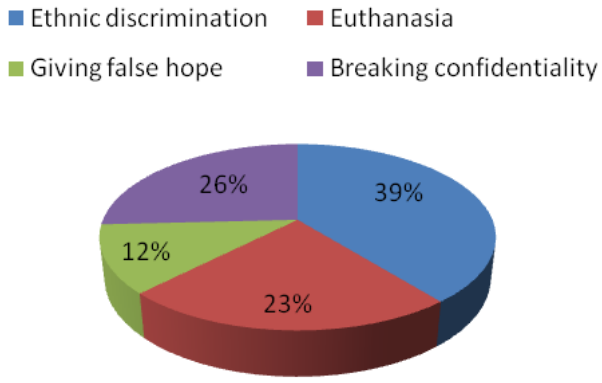


Figure No.11: What goes most against the oath of a Doctor?

DISCUSSION

Netherlands had already experienced open euthanasia practice for two decades before it was officialy legalized.[21] Netherlands was the first country in the world implement euthanasia act in 2001, but implementation of act has not increased the request of euthanasia.[22] According to the United Nations, Netherlands is violating Universal Declaration of Human Rights by adopting act of euthanasia and risking the rights of safety and integrity for every person's life. The UN has also expressed concern that "the system may fail to detect and to prevent situations in which people could be subjected to undue pressure to access or to provide euthanasia and could circumvent the safeguards that are in place."[24] Managing death with euthanasia cannot be generalized globally as other medical practices. Religion, customs and taboos have varied perspectives on end of life. In studies from Malaysia and Pakistan views the Muslim euthanasia is likely being governed by religious beliefs of the respondents. With the increasing numbers of needy patients for life support, legalization of euthanasia is likely to be raised in countries.[23]

A study in New Delhi shows that most of the physicians accept withholding or withdrawal of treatment. It has been noticed that the attitude towards death varies according to the country, culture and religion.[23] In this study Muslim in general, strongly opposed euthanasia at 44% as compared to 10% while Christians were open to idea of euthanasia. Whereas considering biomedical ethics, one fourth of the subjects thought euthanasia is outside the domain of ethics.

62% agreed to the fact of life and death being in the hands of God, "and no person can ever die except by Allah's leave and at an appointed time. Quran 3: 124.

In all the 3 case studies about 50% of students were of the perspective of counseling, family support and let nature take its course. Only 10% opted for voluntary euthanasia, 40% for passive euthanasia & 13% for active euthanasia in their respective case studies.

CONCLUSION

To conclude majority of the medical students are aware of the biomedical, ethical and religious implications of euthanasia however, more seemed inclined for passive euthanasia. Religion seemed to be a deciding factor with gender playing a comparatively smaller part in the disposition of individuals for Euthanasia.

The medical side of end-of-life adjudications and the impact on society still needs to be thoroughly addressed, with the understanding of such ultimate settlements along conventional branches of care and service.

Acknowledgement

We are thankful and acknowledge the efforts of Kamana chalise, Aesha Riffat Hashmi, Ashok Cotwani, Madiha Kiran, Anum Mehdi, Sumera Malik, Atif Rasool and Mari Ahmed(4th year students-Batch- 2011) Department of Community Medicine, Sindh Medical college, DUHS for data collection.

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Original Article

An Audit of TURP at DHQ Hospital Abbottabad

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ABSTRACT

Background: As the age advances benign prostatic hyperplasia occurs in almost all men. BPH produces symptoms mostly after 50years of age. Non surgical/ conservative management for bladder outflow obstruction mainly due to obstructive prostate includes selective alpha adrenergic blockers and alpha 1 reductase inhibitors. They have significant role but only in patients who have small prostate or who are waiting for surgery. However 30% of men eventually require surgery for BPH. Because of high risk of morbidity and mortality to elderly patients undergoing prostate surgery, the search for a procedure with minimal associated risks has continued. Therefore different procedures have been tried. Among surgical treatment for the disease, TURP has a definite edge over open procedures and has become a reference standard for prostate surgery.

Study Design: Retrospective study

Place and Duration of Study: This study was conducted at DHQ Hospital Abbottabad from 1998-2001.

Patients and Methods: Total 133 patients were treated during this period. Patients of all ages were included. The patients were divided into 04 age groups. Patients were investigated with physical examination, ultrasonography, ECG, Chest X-ray, Blood CP, Urea/creatinine. Standard procedure with 24 Fr. Resectoscope was used with cutting loop. Patients were followed up post operatively and complications noted.

Results: The common age group was 61-70 years (51%). Size of prostate gland was 60-80gms in (32%) cases. Bleeding was the most common complication (9%). Conversion to open was in 02 cases (1.5%). Myocardial infarction occurred in 04 cases which resulted in death of these patients postoperatively.

Conclusions: BPH produces symptoms mostly after 50years of age. Nearly 70% of 70 years old men have BPH. However 30% of men eventually require surgery for BPH. Among surgical treatment for the disease, TURP has a definite edge over open procedure. . It has very low complications in good hands. TURP has become a reference standard for prostate surgery.

Key words: Benign prostatic hyperplasia, TURP, bladder outflow obstruction

INTRODUCTION

Prostate is the largest accessory reproductive gland of male which has potential to grow with age. As the age advances, benign prostatic hyperplasia occurs in almost all men. BPH produces symptoms mostly after 50years of age. Nearly 70% of 70 years old men have BPH causing symptoms and hampering the quality of life in these patients. These patients are forced to seek medical treatment to improve quality of life. Non surgical or conservative management for bladder outflow obstruction mainly due to obstructive prostate includes selective alpha adrenergic blockers and alpha-1 reductase inhibitors. They have a significant role but only in patients who have small prostate or who are waiting for prostatic surgery. However 30% of men eventually require surgery for BPH. Because of high risk to elderly patients undergoing prostate surgery, the search for a procedure with minimal associated risks has continued. Therefore different procedures have been tried. Among surgical treatment for the disease, TURP has a definite edge over open procedures and has become a reference standard for prostate surgery. Bleeding, clot retention, incontinence of urine and retrograde ejaculation are major complications of TURP which are minimal in good hands. Patient's stay in the hospital is 1-2 days. Foley catheter is removed after 02 days. Transurethral bladder neck incision of prostate and Laser ablation of prostate is technically simple, relatively quick procedure and has low morbidity but is only effective in small prostate. The hospital stay is also considerably shortened. The results are however not very impressive. A relatively new technique transurethral needle ablation (TUNA) and Transurethral electrovaporization of prostate (TUEVP) have been noted to produce better symptomatic relief when compared with lasers. Transurethral microwave thermotherapy has been attempted but no convincing objective improvement seen in patients. Trans urethral balloon dilatation of prostate also has insignificant blood loss, shorter hospital stay and less risk of retrograde ejaculation. The results are not good in relatively larger glands when compared to TURP.

PATIENTS AND METHODS

Total 133 patients were treated during this period. Patients of all ages were included. The patients were divided into 04 age groups. Patients were investigated

with physical examination, ultrasonography, ECG, Chest X-ray, Blood CP, Serum Urea/creatinine and screening for Hepatitis B and Hepatitis C. Patients having IHD, bleeding disorder, hepatitis B and C positive and bladder stone were excluded from study. Most of the patients presented with acute urinary retention 76 (57%) while 57 patients (43%) were admitted through OPD with catheter in place who were waiting for surgery for quite some time. Standard procedure with 24 Fr. Resectoscope was used with cutting loop. Solution used was 5% dextrose for irrigation during surgery and 0.9% saline for post operative bladder irrigation. 3-way Foley catheter was passed post operatively with continous irrigation which was removed after 48 hours. Anaesthesaia administered was spinal in 128(96%) and GA in 05(04%) cases. Patients were followed up post operatively and early and late complications noted.

RESULTS

The common age group was 61-70 yrs. (51%). Size of the prostate was 60-80 gms in 42 patients (32%), while 05 patients (04%) had prostate of 100-120 gms. Direct inguinal hernia was the common associated finding in 38(28.5%) patients while senile cataract was present in 12(09%) patients. Post operative complications were Bleeding in 12 patients (09%), UTI (7.5%), incontinence (1.5%), recurrence of symptoms in (04%), chest infection in (03%). 04 patients had acute Myocardial Infarction post-operatively and died while 02 patients (1.5%) were converted to open transvesical prostatectomy. Most common complication was bleeding which occurred in 12(09%) cases. Post operative hospital stay was 02 days in 122(%) cases. While 04 patients had 4-6 days stay. Antibiotics were started pre-operatively and continued post. operatively for 07 days. UTI occurred due to surgery and also because the patients had indwelling catheter pre-operatively. 3-way Foley catheter was passed with irrigation which was removed after 48 hours in128 patients while in 05 patients it was retained for 04-06 days because of bleeding.

Table No.1: Age wise Distribution (n= 133)

Age in Yrs	No. of Patients	Percentage
50-60	15	11
61-70	68	51
71-80	32	24
81 and above	18	14

Table No.2: Size of Prostate Gland (n= 133)

Size of gland in gms	No. of patients	Percentage
30-40 gms	22	16.5
40-50gms	16	12
50-60gms	36	27
60-80gms	42	31.5
80-100gms	12	09
100-120gms	05	04

Table No.3: Presentation (n= 133)

Presentation	No. of patients	Percentage
Ac. Retention	76	57
OPD with Catheter	57	43

Table No.4: Complications (n= 133)

Complications	No. of patients	Percentage
UTI	10	7.5
Incontinence	02	1.5
M I & Death	04	03
Chest infection	04	03
Recurrence	05	04
Conversion to open	02	1.5
Bleeding	12	09

Table No.5: Anaesthesia (n= 133)

Anesthesia	No. of patients	Percentage
Spinal	128	96
GA	05	04

DISCUSSION

Benign prostatic hyperplasia occurs to almost all men mostly after 50years of age. Nearly 70% of 70 years old men have benign prostatic hyperplasia. Non surgical or conservative management for bladder outflow obstruction mainly due to obstructive prostate has significant role but only in patients who have small prostate. However 30% of men eventually require surgery for BPH. Among surgical treatment for the disease, TURP has a definite edge over open procedures and has become a reference standard for prostate surgery. As the patients undergoing prostate surgery are elderly, the search for a procedure with minimal associated risks has continued.TURP can be performed easily. It has very low complications in good hands. Bleeding and clot retention are major complications, which are minimal experienced hands. Bleeding and clot retention were most common complication in our study which was about 09%. We had to convert to open procedure in 02 cases because of excessive bleeding. Water intoxication also occurs with patients having larger prostate and longer operation time which did not occur in our study. Urinary incontinence is other complication which occurs due to damage to internal sphincter. This can be avoided by recognizing the verumantanum and keeping the resection away from it. We had 02 patients developing urinary incontinence. Patient's stay in hospital is for 1-2 days which reduces hospital expenses and there is less burden on patient's resources. The objective improvement of symptoms is also satisfactory. TURP avoids the stress of open surgery. TURP avoids wound infection and urinary fistula formation. Early mobilization of the patient is easy and avoids many complications. It is well tolerated by the patients. The procedure has been done satisfactory in patients with prostate up to 120 gms. Large prostate size needs open

surgery. Concurrent bladder stones can be removed by litholapaxy.

CONCLUSION

BPH produces symptoms mostly after 50years of age and 30% of men eventually require surgery for BPH. Among surgical treatment for the disease, TURP has a definite edge over open procedure. It has very low complications in good hands. Benefits of TURP are shorter hospital stay, shorter catheterization time and shorter recovery time. TURP has become a reference standard for prostate surgery.

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Original Article

Frequency of Thrombocytopenia in Children Suffering from Malaria

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ABSTRACT

Objective: - To determine the frequency of thrombocytopenia in children suffering from malaria.
Study Design: Descriptive Study.
Place and Duration of Study: This study was carried out in pediatric department of Bolan Medical College Quetta during 18 months from April to October 2011.
Materials and Methods:- A total of 140 malaria parasite positive on peripheral film children from 6 months to 7 years of age hospitalized due to febrile illness were included in the study. Hematological parameters were determined by using automated analyzer. Those with reduced platelets count were reevaluated by manual method. Thick and thin smear stained with Giemsa for malaria parasite was studied by hematologist. Mild thrombocytopenia was labeled with platelets count < 150,000 to > 50,000 /cumm, moderate with platelets count of < 50,000 to > 20,000/cumm and severe with platelets count < 20,000/cumm.
Results: Out of 140 malaria parasite positive children, 100 (71.4%) had thrombocytopenia while 40 (28.6%) had normal platelets count. Mild thrombocytopenia was common in p falciparum 40% as compared to 14% in p vivax. Moderate and severe thrombocytopenia was common in p vivax 28% and 4% against p falciparum 12% and 2% respectively. 94 (67.1%) were male and 46 (32.9%) female.
Conclusion: Thrombocytopenia was found to be significant in children suffering from malaria. Mild thrombocytopenia was common in p falciparum but the moderate and severe thrombocytopenia was common in p vivax.
Key Word: Malaria, Plasmodium falciparum, Plasmodim vivax, Thrombocytopenia.

INTRODUCTION

Still malaria is one of the major health problems worldwide. Over three billion people live under the threat of malaria in 24 endemic countries[1]. Every year more than one million person in the world are suffering from this disease. It kills about 1-3 million people in the world every year [2]. In Pakistan half a million malaria cases occur annually and estimated fifty thousand deaths occur each year. The bulk of mortality is seen in children. Those who survive to childhood acquire significant immunity with low grade parasitemia and few symptoms [3]. Plasmodium vivax and plasmodium falciparum are the species responsible for the malaria in Pakistan [4]. In the last decade there has been a six time increase in plasmodium falciparum malaria which now comprises 42% of all malaria

Cases reported by the National Malaria Control Program[5]. Malaria is a major community problem in Baluchistan too. Malaria control program in its yearly report shows slide positivity rate 10.1% (p vivax, 6.6% p falciparum 3.5%) in 2004, 11.2% (6.6% p vivax, 4.6% p falciparum) in 2005 and 12.7% (8.2% p vivax, 4.4% p falciparum) in 2006. [6]. According to Sheikh et al, slide positive rate was 34.8% in Quetta during 1994 to 1998 [7]. In central area of Baluchistan (Mastung, Khuzdar district) 26.6% positivity rate was found in year 2004 to 2006 [8].

According to Yasinzai slide positivity rate was 16.2% in Quetta rural and 15.4% in Quetta urban, with slightly higher percentage of p falciparum 65.8% in rural and 55.5% in urban areas[9].

The pathology of malaria is related to anemia, cytokines release and in case of falciparum wide spread organ damage due to impaired microcirculation after blockage with red blood cell infected with parasite. Various degrees of reduced blood counts and mild to moderate thrombocytopenia is a common association of malaria but it is rarely associated with haemorrahgic manifestation or a component of disseminated intravascular micro vascular coagulation[10]. Though the anemia is hemolytic in nature, the hemopoietic response is blunted as evidence by disproportionate reticulocytes count. In tropical area malaria has been reported as one of the major cause of low platelet counts. The cause of thrombocytopenia is poorly understood. Malaria related thrombocytopenia may result from either a decrease in platelets production or increased platelets destruction by different mechanisms. Immune mediated lyses and sequestration in the spleen has been postulated. Abnormalities in platelets structure and function have been described as a consequence of malaria and in rare cases platelets can be invaded by malaria parasites themselves[11]. Tumor necrolysing factor and 1L-10 have been implicated in the development of p falciparum malaria induced anemia, but the role of these cytokine has not been studied in the development of

thrombocytopenia in patient with acute malaria[12]. A central mechanism is unlikely since increased number of megakaryocytes are found in patient with acute malaria.

MATERIALS AND METHODS

The study was conducted in Paediatric department of Civil Hospital Quetta. All hospitalized children from 6 months to 7 years of age suffering from febrile illness with peripheral blood film positive for malaria parasit were included in the study. Hematological parameters were determined by using automated analyzer. Those with reduced platelet counts reevaluated by manual method. Thick and thin smear were stained with Giemsa for malaria parasite and was studied by Hematologist. Patients with thrombocytopenia were divided into 3 categories:

1. Mild thrombocytopenia <150,000 to > 50,000/cumm
2. Moderate thrombocytopenia <50,000 to >20,000/cumm
3. Severe thrombocytopenia <20,000/cumm

Patients with history of bleeding disorder, dengue fever, cerebral malaria and drug intake such as Quinine, Sulphadoxine-Pyrimathamine, Thiazide and Co-trimoxazole were excluded. Data was analysed by SPSS Version 10.

RESULTS

A total of 140 children with malaria parasite positive were studied during 18 months period from April 2010 – October 2011. Out of 140 malaria cases 84 (60%) were positive for p falciparum and 56 (40%) were positive for p vivax (Table 1). No one was positive for p malare or ovale. 94 (67.1%) were male and 46 (32.9%) were female (Table 2) M:F ratio 2.04:1. Out of 140 cases 40 (28.6%) had normal platelet count, 100 (71.4%) had thrombocytopenia (Table 4.I). Out of 100 thrombocytopenic children mild thrombocytopenia was found in 54 (54%) cases, moderate in 40 (40%) and severe in 06 (6%) cases. Out of 54 mild thrombocytopenic children 40 (74.07%) were positive for p falciparum and 14 (25.93 %) were positive for p vivax . Moderate thrombocytopenia was found in 40 (40%) cases, out of them12 (30 %) were positive for p falciparam and 28 (70 %) were positive for p vivax. Severe thrombocytopenia was found in 6 (6%) cases, out 0f it 2 (33.3%) were positive for p falciparam and 4 (66.7%)were positive for p vivax .All patients were cured and discharged with no morbidity or mortality . None of them developed bleeding from any site and did not require blood or platelet transfusion. Mild thrombocytopenia was more common in p. falciparam (40%) as compared to p vivax (14%). Moderate and severe thrombocytopenia was common in p vivax (28%) and (4%) against (12%) and (2%) in p falciparum respectively (Table 4.II).

Table No.1: Distribution of Patient by Type of Plasmodium Type.

Plasmodium Type	Frequency	Percent
faciparum	84	60.0
vivax	56	40.0
Total	140	100.0

Table No.2: Distribution of Patient by Gender.

Gender	Frequency	Percent
male	94	67.1
female	46	32.9
Total	140	100.0

Table No.3: Distribution of Patients by age.

Age Group	Frequency	Percent
6 mon - 1 year	2	1.4
1-3 years	20	14.3
3-5 years	38	27.1
5- 7years	80	57.1
Total	140	100.0

Table No.4-I: Frequency of Thrombocytopenia in Cases of Malaria.

Platelet Counts	Frequency	Percent
Thrombocytopenia	100	71.4
Normal	40	28.6
Total	140	100.0

Table No.4-II: Frequency of Thrombocytopenia in Cases of Malaria

Platelet Counts	Frequency	Percent
50000-150000 mild	54	54
20000-50000 moderate	40	40
<20000 severe	6	6

Table No.5: Distribution of Patient by Platelet count type of Plasmodium

Platelets Count	Type of plasmodium		Total
	faciparum	vivax	
50000-150000 mild	40	14	54
20000-50000 moderate	12	28	40
<20000 severe	2	4	6
normal	30	10	40
Total	84	56	140

DISCUSSION

Malaria is one of the common causes of febrile illness in our country but the clinical diagnosis is difficult. Falciparam malaria is associated with a variety of complications and has high mortality. Thrombocytopenia is a common feature of acute malaria occur both in p falciparum and p vivax regardless of severity of infection in 60 – 80 % cases[13]. Prevalance of thrombocytopenia 78.4% of the

cases highlights the fact that a persistent normal platelet count is unlikely in the laboratory finding of malaria[14]. In this study thrombocytopenia was found in 67.1% of cases which is quite significant and comparable to the studies done by others as 71% by Robinson[15], 58.97 % by Rodriguez[16] and 70% by Memon[17]. Maximum thrombocytopenia occurs on fifth or sixth day of infection and gradually return to normal within 5 to 7 days after parasitemia ceased. It is a general consensus that thrombocytopenia is very common in malaria[18] and this is usually believed that it is more common in falciparum malaria. The results of our study show that although thrombocytopenia as a whole is more common in P falciparum 84% as compared to P vivax 56%, yet the moderate and severe thrombocytopenia is more common in p vivax 28% and 4% against the p falciparum 12% and 2% respectively. This is contrary to the common believe that the Severity of thrombocytopenia is common in p falciparum as proved by the study of India that the platelet count <20,000/cumm was noted in 1.5% of cases in children of p vivax against 8.5% cases of p falciparam[14]. Accorcding to a study of Pakistan in children thrombocytopenia was found to be more common in p vivax (72%) as compared to p falciparum (11%)[19]. Thrombocytopenia even when severe, statistically not associated with abnormal bleeding. The good tolerance of low platelet counts is well known in malaria[20]. It could be explained by platelet activation and enhanced aggregrability[21]. In conclusion thrombocytopenia found to be significant in malaria and in febrile illness mild to severe thrombocytopenia should alert the possibility of malaria. Very few data is available about thrombocytopenia in pediatric malaria. It needs further studies and data to know the significance of platelet in diagnosis and prognosis of malaria in children especially the severity of thrombocytopenia related to type of plasmodium

CONCLUSION

Thrombocytopenia was found to be significant in children suffering from malaria. Mild thrombocytopenia was common in p falciparum but the moderate and severe thrombocytopenia was common in p vivax.

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Original Article

Significance of Cephalic Index in Race Determination

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ABSTRACT

Introduction: Significance of cephalic index regarding our population is to identify the category of our race, into which type of cephalic index does it fall.

Aims and objectives: To categorize our community into a type of population, whether they fall into dolicocephalic, mesocephalic or brachycephalic cranial index.

Study Design: Descriptive study

Place and Duration of study: This study was conducted at the Anatomy and Forensic departments of Aziz Fatimah Medical College, Faisalabad and Anatomy department of Punjab Medical College, Faisalabad from October 2011 to March 2012.

Materials and Methods: This research was conducted upon 100 dried skulls, which were of adult size including both males and females. Measurements were noted making use of Vernier,s caliper. Length of skulls was measured as from summit of glabella anteriorly to the farthest occipital point, posteriorly. Breadth of skulls was measured as a line drawn perpendicular to maximal length of skull i.e. from the points of maximum parietal convexities. Then cephalic index was calculated for each skull.

Results: In our study we measured the maximum length and maximum breadth of 100 skulls and worked out the cranial indices of each skull present in our sample. We also calculated the percentage of different categories of skulls like dolicocephalic, mesocephalic and brachycephalic in our sample. Moreover, we also calculated the mean value, standard deviation, confidence interval CI, mean standard error, degree of freedom df, t and p values of the cranial indices, using SPSS software.

Conclusion: Punjabi population in Pakistan is predominantly Dolicocephalic as shown in our study. This study can be used for future references in race determination.

Key words: cranial index, dolicocephalic, mesocephalic, brachycephalic, glabella, occipital point, parietal convexities.

INTRODUCTION

Most of the population of the world has been divided into three types on the basis of cephalic index as Dolicocephalic (Australians, South Africans), Mesocephalic (Chinese, Europeans) and Brachycephalic (Mongols). Cephalic index is calculated from skulls as follows.

$$\text{Cephalic index} = \frac{\text{Max. Breadth of skull}}{\text{Max. Length of skull}} \times 100$$

Cephalic index in dolicocephalic people ranges between70-75, in mesocephalic between75-80 and in Brachycephalic its value is >80.[12]

Forensic importance of cephalic index is in race determination and hence in identity of the humans. Cephalic index could be helpful in identifying race of an individual, particularly in air accidents where different passengers were traveling and belonged to different countries of the world. In air crashes, due to burning, dead bodies get skeletonized and craniomtry is very helpful in human identification. Similarly cephalic index can be applied in any other situations where identity of an unknown, unclaimed dead body is to be proved in addition to other parameters.[5]Forensic importance of cephalic index particularly in Pakistan is that a known group of door to door wandering beggars, who are dressed in green clothes and posses small heads, small foreheads with typical faces and are mentally retarded. These small headed and mentally retarded beggars are produced in an astonishing manner by fixing iron rings around the heads in early infancy, causing retardation of growth of skull bones and hence mental retardation.[16]

MATERIALS AND METHODS

Inclusion criteria: All intact skulls of adults were included in our study, which were present in Anatomy and Forensic departments of Aziz Fatimah Medical College, Faisalabad and Anatomy department of Punjab Medical College, Faisalabad.

Exclusion criteria: Decayed skulls and skulls of children were excluded from our study.

Study Design: Descriptive study

Place of study: Anatomy and Forensic departments of Aziz Fatimah Medical College, Faisalabad and Anatomy department of Punjab Medical College, Faisalabad.

Study duration: From October 2011 to March 2012.

This research was conducted upon 100 dried skulls, which were of adult size including both males and

females. Measurements were noted making use of Vernier,s Caliper. Length of skull was measured from summit of glabella anteriorly to the farthest occipital point, posteriorly. Breadth of skull was measured as a line drawn perpendicular to maximal length of skull i.e. from the points of maximum parietal convexities. Then cephalic index was calculated for each skull with the formula

$$\text{Cranial index} = \frac{\text{Max. Breadth of skull}}{\text{Max. Length of skull}} \times 100$$

RESULTS

In our study we measured the maximum length and maximum breadth of 100 skulls and worked out the cranial indices of each skull present in our sample as shown in table 1.

We also calculated the percentage of different categories of skulls like dolicocephalic, mesocephalic and brachycephalic in our sample as shown in table 2.

Moreover, we also calculated the mean value, standard deviation, confidence interval CI, mean standard error, degree of freedom df, t and p values of the cranial indices, using SPSS software as shown in table 3.

Table No.1: Maximum length and maximum breadth of 100 skulls

Length range in cms	Breadth range in cms	Range of Cranial indices	Type of cranial index
16.4-19.5	11.7-13.7	65-74.57	Dolicocephalic
17-18.9	12.9-14.8	75.27-79.78	Mesocephalic
17-18.1	13.8-14.7	80-82.94	Brachycephalic

Table No.2: % age of different categories of skulls

Type of Cranial index	Percentage
Ultradolicocephalic	-----
Hyperdolicocephalic	
Dolicocephalic	57%
Mesocephalic	35 %
Brachycephalic	8 %
Hyperbrachycephlic	--------
Ultrabrachycephalic	---------

Table No.3: Standard Deviation

Mean ± standard deviation	Reference range CI	Df degree of freedom	T value $t_{obt=\frac{x-\mu}{s/\sqrt{n}}}$	P value
73.56 ± 3.88	72.79-74.32	99	73.56-76.9/ .388=-8.6	<.0001
			$T_{crit=1.66}$	

DISCUSSION

Our study signifies the importance of cranial indices in Punjabi population for future references for forensic investigative procedures to determine the race of the individuals. Our study indicates that most of the skulls in our sample fall into the dolicocephalic category (57%). The second most common category in our population is mesocephalic, which is 35% in our study. The brachicephalic types of skulls are among the least common categories in our population (8%).

Variations in cephalic index between and within population have been attributed to a complex interaction between genetic and environmental factors as indicated in the study of Obikili, E.M. et al.[1]In another study conducted by Oladipo,G.S. and E.J.Olotu, they reached the conclusion that most of the population of Ijaw and Igbo tribes of Nigeria are of mesocephalic variety. They are of the opinion that this data would prove beneficial for Anthropologists, Geneticists, forensic experts and medical practioners in future.[2,3] In another study conducted in Gujarat of India, the mean cephalic index in both sexes is 80.81, ranging from 71.10 to 89.77 which is contrary to our study in which we found the mean cranial index to be 73.56. This may be because of different ethnicity, geographical environment, habitat, nutritional circumstances and influence of inheritance of our sample.[4]In another study conducted in India, northern regions showed predominance of mesocephalic phenotype in both the sexes. Mean cephalic index of the students of northern Indian origin was studied using spreading caliper and the finding was 79.72.[6]The mean cranial indices from male and female skulls examined in another study carried out by Seema, Mahajan A, Ghandi D. were 72.64+-3.22 and 72.06+-2.97 respectively. All the skulls belonged to dolicocephalic category which is consistent with our study.[7,8,9]

In another study conducted in Africa the mean cephalic index between the sampled populations was 77.95 ± 4.34 cm. There was an observed significant effect of age on cephalic index ($p < 0.01$) but gender showed no significant effects on cephalic index. The values for the three selected tribes did not differ significantly from one another nor differ from the population mean ($p < 0.05$). The mean male and female cranial index values were 77.67 and 78.14, respectively.[10]In another study conducted in Tehran brachicephalic index was found in most of the students.[11] Anthropometric studies are conducted on the age, sex and racial/ethnic groups in certain geographical zones.[13] Lobo S. W. et al studied 267 (157 males & 110 females) subjects of Gurung village, Nepal. The mean cephalic index for male was 83.10±6.08 and for female was 84.60±5.14. Most of their subjects belonged to brachycephalic group. The mean head length for male is 18.0±0.85 cm and for female is 17.4±0.78 cm.[14]Another study shows that majority of male of Andhra region are dolicocephalic or mesocephalic and female are mesocephalic. Cephalic index of the female is 2-3 point higher than the male in Andhra region population. This study will serve as basis of comparison for future studies on Andhra region population.[15] Brachicephaly and hyperbrachicephaly were found in 168 mentally challenged children taken

from 'Aashakirana' a school for mentally challenged at Davangere (Karnataka).[16] Currently, the development of computed tomography and medical imaging techniques is widely accepted as a standard protocol for clinical diagnosis and surgical treatment planning. It enables 3D reconstruction and assesses craniofacial morphometric data both inner and outer anatomical landmark for the craniometric study.[17,18]Odokuma et al. (2010) among the Urhobos, Ibos and Edos ethnic groups of Nigeria studied cranial index of dead remains recovered from Southwestern region of Nigeria and this will no doubt form a baseline data for subsequent studies especially as regards the populations from which the skulls were sourced. In another study the results showed a significant effect of cranial volume on the measured ethnic groups at 0.05 level of significance. While the Ibo's had an average cranial volume of 1273.39 cm, that of the Urhobo's was 1255.89 and 1310.08 cm for the Edo people. Also the cranial capacity of male (1334.34 cm^3) was significantly different from that of female (1204.54 cm^3) in all the studied tribes, male being larger than that of female $p < 0.05$.[19]

In our study, mean cranial index was found out to be 73.56 ± 3.88. The t_{obt} is more than the $t_{crit,}$ this means that the mean of population is not equal to 76.9 so we reject the null hypothesis. As p value is less than 0.05 so it is statistically significant.[20]

CONCLUSION

Punjabi population in Pakistan is predominantly Dolicocephalic as shown in our study. This study can be used for future references in race determination.

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Original Article

Correlation of Triceps Skin fold with BMI in Age Matched Men: Anthropometric Analysis

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ABSTRACT

Objectives: To study the thickness of the triceps subcutaneous fat measured by the caliper anthropometry, in age matched individuals having different body mass indices; and to determine if there is any correlation between the thickness of subcutaneous fat with that of the body mass index (BMI).

Study Design: Cohort prospective.

Place and Duration of Study: This study was conducted at Anatomy Dept, Nishtar Medical College, Multan from August 2010 to December 2010.

Materials and Methods: Observations were made on 260 healthy men of 20-50 years of age. Regression analysis and Pearson's correlation coefficient were computed and are statistically significant ($p < 0.05$-0.01).

Results: The results reveal that the triceps skin fold fat was very strongly correlated (range = 0.88 to 0.96) in all age groups. While in case of BMI it good in Groups I & II. On the other hand Age and BMI show little correlation with that of triceps muscle area. The results are statistically significant p value being 0.05 to .01.

Conclusion: The study reflects some limitations of triceps anthropometry in estimating obesity but still has value in assessing nutritional status in special circumstances like refugee camps, schools, etc.

Key Words: Triceps Skin fold, BMI, Anthropometric Analysis.

INTRODUCTION

The human body composition assessment in research is well established. Most body composition assessment methods are based upon two models. The body may be divided into either two chemically distinct compartments, fat and fat free or four chemical compartments composed of water, proteins, lipids and bone minerals[1].

There are simpler and less expensive methods which assess the adipose tissue of the body to various degrees of accuracy, like, normal average weight and height charts. With the consideration of the skeletal frame, they are used widely to assess the overweight. Various body circumferences, particularly the ratio of waist to hip circumference, are used. Skin fold measurements also give good idea of the body fat and non-fat compartments.

Body Mass Index: The weight in relation to height is expressed as body mass index (BMI).

BMI = weight in Kg / height in m^2.

This simple measurement also known as Quetelet's Index correlates quite highly with other sophisticated technical methods of assessment of body fat[9]. The normal value for this index for men and women is 20-25 kg/m^2 (Ref.2) On the other hand a study published in 2010 that followed 11,000 subjects for up to eight years concluded that BMI is not a good measure for the risk of heart attack, stroke or death. A better measure was found to be the waist-to-height ratio[3]. The most accurate techniques, like denstiometry, computed tomography, magnetic resonance imaging, electrical conductivity; total body water determination by isotope dilution method, whole body counting of potassium 40, and neutron activation analysis is very expensive and not suited for clinical or epidemiological studies.

Obesity is established when more than 20% of body weight is due to fat in men and more than 25% in women. Obesity is on the increase with improved socio-economic conditions in Pakistan and other developing countries. It is decreasing in higher socio-economic classes of the Western world but exhibiting a rise in its middle class population[4]. Lean body mass decline accelerates after 60 years while fat keep increasing up till 75 years of age[4].

Anthropometric analysis of mid upper arm: The arm consists of a cylinder of muscles within a sheet of adipose tissue. From the external circumference of mid-arm and the width of adipose layer (equal to one half of the skin fold); mid-arm muscle area can be calculated (Figure-5). Mid-upper arm circumference (MUAC) measurement, if conducted by well-trained staff, can give a quick assessment of new arrivals at a refugee camp during a humanitarian crisis[5]. Normal average values for the adult American men are: mid upper arm muscle area is 50.1 cm^2 (Ref. 2). No difference was noted between measurements on either side of the body, nor is the thickness of the subcutaneous fat affected by the muscular activity. Therefore the skinfold thickness of a tennis player is no different at the upper arm sites in the active arm compared to the less active arm. Various callipers have been used previously but no significant difference was noted[6].

MATERIALS AND METHODS

The study was conducted on two hundred and sixty middle class healthy men. All the subjects were volunteers; usually accompanying the patients coming

for ultrasound scan to the clinic. A Performa for every subject was filled. The subjects were weighed on the weighing machine, with minimal clothing. Their height was measured in centimetres. The weight and height of the subjects were recorded in multiples of 0.5 kilograms and 0.5 centimetres, respectively.

Triceps Skin Fold Thickness and Mid Upper Arm Circumference:
Skinfold thickness was measured on the left limb, to the nearest millimetre, and the mid-arm circumference up to nearest 0.5 centimetres. The recordings were made while subject was standing erect and relaxed. The instrument used for the measurement of skinfold thickness was Vernnier's calliper. The circumference of the upper arm was obtained using a flexible cloth tape. The principle of anthropometric analysis is illustrated in the Figure-5. Mid upper arm muscle circumference was calculated by the formula:

Muscle Circumference = $C_1 - \pi S$

C_1 = mid upper arm circumference in cm.

S = Triceps skin fold thickness.

Statistical Analysis: The statistical analysis was conducted for the whole data (n=260), for all the three age Groups (Group A, n=87, Group B, n=88 and Group C, n=84), and for all the three BMI Groups (Groups, I n=100, II n=97 and III n=63). Mean, median, mode and standard deviation for all the observed values were computed. The data proved to be quite consistent; hence it was decided to use the mean for all further computations, as required. The computer software, "Statistical Package for Social Sciences" were used for all computations and data handling.

Pearson's Correlation was computed for actual observations of the whole data. Correlations were considered statistically significant with confidence level 0.05 and highly significant with level 0.01.

Regression Analysis: Regression analysis was searched using simple Linear, Log linear and Multiple linear models. Simple linear model resulted in good regression coefficients, which were statistically significant too, but with multiple linear models, the regression coefficients improved and the statistical significance remained high. Multiple regression equations were computed. Age and BMI were regressed on triceps' subcutaneous fat in all Age and BMI Groups. Results were statistically tested by F-Statistics. Curvefit Linear Regression lines were plotted to know the effect of the age and BMI on the triceps' subcutaneous fat for the three age Groups and the three BMI Groups. These lines were grouped for age and BMI and are presented together for comparison.

RESULTS

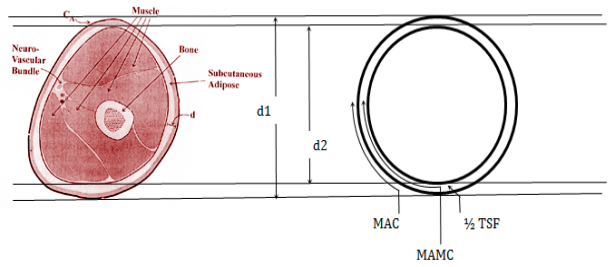
Correlation Analysis for Complete Data:
Pearson's Correlation Coefficients for the actual values of fat for complete data are shown in table-2. The results reveal that the triceps skin fold fat was very strongly correlated (range = 0.88 to 0.96) in all age groups. While in case of BMI it good in Groups I & II (Table 2)

Table No.1: Grouping of the Subjects

BMI Groups Age Groups	GROUP- A = < 25 Kg /m^2	GROUP - B > 25 - 35Kg/m^2	GROUP - C > 35 Kg / m^2	Total No of subjects in Age Groups
GROUP-I 21 - 30 years	n = 31	n = 34	n = 22	n = 87
Group-II 31 - 40 years	n = 35	n = 31	n = 23	n = 88
Group-III 41 - 50 years	n = 34	n = 32	n = 18	n = 84
Total No of subjects in BMI Groups	Grp-A n =100	Grp-B n = 97	Grp-C n = 63	Grand Total 260

Table No.2: Correlation Coefficient of Complete Data, Age and BMI Groups.

Measurements	**Split Data**					
	Age Groups (Cor. Coeff. for BMI)			**BMI Groups** (Cor. Coeff. for Age)		
	A	B	C	I	II	III
Triceps Skin Fold	0.9637**	0.9321**	0.9609**	0.8677*	0.8966**	0.6789**
Fat Area Triceps Skin Fold	0.8832**	0.9014**	0.9232**	0.8722*	0.7855*	0.8742*
Muscle Area Triceps Skin Fold	0.5421**	0.5368**	0.3918**	0.4542*	0.5245*	0.5211**
*p=0.05 **p=0.01 (2-Tailed)						



Calculation of mid-arm Muscle Circumference
C_1 = mid upper arm circumference in cm
S = triceps skin fold in cm
d_1 = arm diameter
d_2 = muscle diameter
Skinfold (*S*) = 2 x subcutaneous fat
$= d_1 - d_2$
Circumference (C_1) = πd_1
Muscle Circumference = $C_1 - \pi S$
Mid arm muscle area = $\frac{[C_1 - \pi S]^2}{4\pi}$
Mid arm fat area = $\frac{(S)(C_1)}{2} - \frac{\pi(S^2)}{4}$
MAC= Mid-arm Circumference
MAMC= Mid-arm Muscle Circumference
TSF= Triceps Skin Fold

Figure No.1: Illustration for principle of subcutaneous fat measurement by the triceps skin fold anthropometry and formula for mid arm muscle and fat circumferences by TSF.

On the other hand Age and BMI show little correlation with that of triceps muscle area. Though the elationship was poor, but notable observation was that muscles thicknesses are positively correlated to that of Age, (Table-2). The results are statistically significant p value being 0.05 to .01.

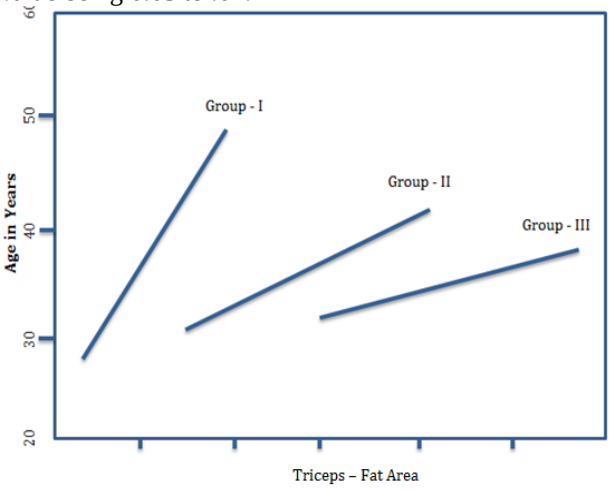


Figure No. 2: Curvefit linear regression lines of three BMI groups, dependent variable age, and independent variable – triceps skin fat area

Correlation Analysis for Split Data Age Groups:
In all the Age Groups II III, and I fat was highly correlated to the BMI at the observed site. Good correlation (range = 0.88 to 0.97) was obtained for calculated values and for triceps skinfold thickness (Figure-2).

Correlation Analysis for Split Data BMI Groups:
To estimate the influence of Age on the correlationship of Age, BMI and fat Pearson's Correlation Coefficients were computed. The Age (Table-2) shows poor correlation with that of fat, in all the three Groups. The relationship with that of BMI was better but not beyond 60%, except in group B, where it approaches 77%.

Regression Analysis: Relatively high coefficient of determination was obtained in Age Groups when BMI was regressed on fat (Figure-2). The relationship of fat and BMI was positive and there was consistent trend for Y-intercept (C), to become higher in Groups with increasing Age. The rate of change in the slope also increases especially in Age group III, demonstrating that more fat was present subcutaneously in this Age group (Figure-2).
When Age was regressed on fat in BMI Groups, the coefficient remained low. The relationship remained positive and linear. The y-intercept (C) increases with increase in BMI Groups, representing more fat deposition with increase in BMI (Table-2). The rate of change in BMI group A was very high, while it was reduced in BMI Groups B and C (Figure-2). This indicated that the relationship of Age on fat in Group-A subjects was more than in Group B and C subjects.

DISCUSSION

Skinfold Compressibility: Variation in the skin fold compressibility is another important factor to be accounted for in anthropometric analyses of skinfold thickness. Durnin and Womersley[6] have confessed that a possible reason for the shift of relationship between body density and skinfold thickness with age is that the skinfold compressibility may become greater with age. The literature review of the past presents evidence against this claim: skinfold-compressibility was found to be maximum in children and minimum in elderly, probably due to decrease in water content of the tissues[6, 7], hence, reducing the credibility of caliper anthropometry. Ohziki et al.,[8] , is of the view that assessment of subcutaneous fat using ultrasonography is not influenced by changes in cutaneous compressibility. Calliper anthropometry is still being quite widely used in clinical research and relied upon[9, 10, 11.]

Triceps anthropometry and BMI: The correlation coefficient between the subcutaneous fat of triceps skin fold, measured by the callipers, and BMI is significantly high (Table-2). The correlation coefficient of triceps skin fold is least in the BMI Group-C, BMI >35 (Table-2). The low coefficient of determination by triceps anthropometry of subcutaneous fat especially in

the BMI Groups is indicative of its limitations in estimating obesity, as is also apparent in correlation coefficient of triceps skin fold subcutaneous fat which is least in BMI groups (Table-2). BMI and triceps skin fold measurement is comparable and hence can be used efficiently in at least refugee population with much ease of single observation[5].

CONCLUSION

Hence, it is inferred that triceps skin fold, reveals increased deposition of subcutaneous fat with advancing age and this effect is more marked in normal weight individuals than of overweight or obese people. The study also reflects the limitations of triceps anthropometry in estimating obesity but still has value in assessing nutritional status of special circumstances.

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Original Article

To Study the Role of Serum Biliurbin and Lipoproteins in Prediction of Ischemic Heart Disease

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ABSTRACT

Background: An inverse relationship between the bilirubin level and ischaemic heart disease was accounted.
Study Design: Cross Sectional Study.
Place and Duration of Study: This study was conducted at Dept. of Biochemistry, Fatima Jinnah Medical College, Lahore from Feb. 2007 to July 2007.
Materials and Methods: Study was performed to determine if serum bilirubin, when combined with various risk factors like lipid and lipoprotein predict ischemic heart disease (IHD).
Results: It is observed that the bilirubin is negatively correlated with hemoglobin, albumin, HDL and LDL-cholesterol. On the other hand a direct correlation with total lipid, cholesterol and ratio of cholesterol/HDL-cholesterol is also observed. High level of serum creatinine level was also found in the patients as compared to normal subject.
Conclusion: Our study observed not a definite relationship between serum bilirubin and IHD. Hence the relationships between bilirubin and lipoproteins (risk factors of IHD) require further clarification, although abnormal intermediary metabolism and antioxidant deficiency may be possible linking factors.
Key Words: Bilirubin, Lipoproteins and IHD.

INTRODUCTION

Bilirubin and albumin may act as antioxidants. Their circulating levels are lower in those patients with ischemic heart disease (IHD) and could be further reduced by more extensive atherosclerosis, i.e. peripheral vascular disease[1].

Circulating bilirubin is considered to protect human tissues from peroxidation of organic compounds, lipids and thus inhibiting foam cell formation in the arterial wall.[2] . Low bilirubin was associated with several cardiovascular risk factors, in particular vascular aging, smoking, low concentrations of high-density lipoprotein cholesterol, low forced expiratory volume and low serum albumin[3].

Low bilirubin level in blood may prove to be a significant marker for the evaluation of the general anti-oxidant status of the human organism. Mechanisms that give rise to this phenomenon are probably diverse and not well-studied yet. Processes of the formation of free oxygen and peroxide radicals are known to take place in numerous pathological conditions[4].

The effects of serum bilirubin on blood lipids and lipoproteins in a number of patients were investigated by a group of workers[5]. The findings were that total cholesterol (TC) and low-density lipoprotein-cholesterol (LDL-C) were negatively correlated with total bilirubin and direct bilirubin. Their results indicate that bilirubin affects metabolism of lipoproteins and the low level of serum bilirubin is a new risk factor for coronary heart disease. This parameter may, alone or in combination with other factors, make it possible to distinguish individuals with a risk of CAD[6].

It was found[7] that elevated serum creatinine has been associated with increased mortality in hypertensive persons, the elderly, and patients with myocardial infarction or stroke in whom cardiovascular disease is the major cause of death.

Present study tried to find out the role of serum bilirubin in prediction of ischemic heart disease when combined with risk factors like lipid and lipoprotein.

MATERIALS AND METHODS

Hundred patients with IHD were included in the study. Patients were taken from in and out department of Medicine. The traditional risk factors like cholesterol, high-density lipoprotein cholesterol (HDL-C), cholesterol/HDL-C ratios, triglycerides as well as serum bilirubin, albumin and creatinie were determined by standard methods. Besides, age, cigarette smoking, and systolic blood pressure were also recorded.

RESULTS

Table 1 shows that the mean age of patients was 46 years. Among these 50% smokers and their mean blood pressure were 100/65mmHg.

Assessment of biochemical parameters was tabulated (Table 2). Level of bilirubin was increased in patients as compared to normal subjects but this shows no significant difference. In case of creatinine and albumin, level of creatinine was significantly ($P<0.01$)

increased in patients whereas the level of albumin was significantly decreased (P<0.01) in patients as compared to the normal subjects. Among lipid profile, It was observed that the levels of serum cholesterol and total lipid were increased in patients. A highly significant difference (P<0.01) was observed in case of serum cholesterol. Level of HDL- chol, LDL-chol and triglyceride were decreased in patients as compared to control subjects but significant difference (P<0.01) was only observed in case of HDL-cholesterol. On the other hand ratio of cholesterol/HDL-cholesterol was increased in patients as compared to control subjects.

Table No.1: Variation in physical Parameters

Parameters	
Mean age	46.7±2.17
Smoking	50% smokers
Mean Blood Pressure(mm Hg)	100/65±3.4/1.6

Table No.2: Variation in bilirubin and other biochemical parameters in serum of Patients and their controls (No of cases in parenthesis and values are in mean±s.e.m)

Parameters	Patients (100)	Control subjects (25)
Bilirubin (mg/dl)	0.94±0.06	0.42±0.04
Creatinine (mg/dl)	1.9±0.81**	0.78±0.03
Albumin (gm/dl)	3.3±0.08**	4.65±0.02
Cholesterol (mg/dl)	254.6±14.8**	185.0±5.9
HDL-chol (mg/dl)	37.56±0.53**	53.56±0.59
LDL-chol (mg/dl)	130.56±7.31	141.87±5.52
Ratio of chol/HDL-chol	6.77	5.38
Triglyceride (mg/dl)	113.5±4.6	125.25±12.83

**P<0.01=Highly significant difference

DISCUSSION

Many risk factors for IHD have been identified. Recently an association between low concentration of serum bilirubin and increased risk of IHD has been reported. It was also observed that bilirubin may affect on the lipoproteins. However, information on this topic remains scarce.

Results of present study indicate that the bilirubin is negatively correlated with hemoglobin, albumin, HDL and LDL-cholesterol. A study observed significantly higher total cholesterol and triglyceride levels and lower high-density lipoprotein cholesterol (HDL-C) levels in the AMI patients. The bilirubin and albumin were lower in AMI patients than controls[8]. Another study provide substantial evidence that serum bilirubin may play a protective role in peripheral arterial disease as well as ischaemic heart disease[9]. It was reported[10] that bilirubin is a potent antioxidant generated intracellularly during the degradation of heme by enzyme heme-oxygenase. Increased heme oxygenase activity was associated with enhanced tissue bilirubin tissue bilirubin content land can increased rate of bilirubin release. Bilirubin may provide cardio protection against reperfusion injury.

On the other hand a direct correlation with total lipid, cholesterol and ratio of cholesterol/HDL-cholesterol is also observed. It was suggested[11] that serum bilirubin may be combined with LDL-C/HDL-C ratios, cholesterol/HDL-C ratios, cholesterol, or with various apolipoproteins to improve the prediction of CAD. Another group[12] found that bilirubin affects metabolism of lipoproteins and the low level of serum bilirubin is a new risk factor for coronary heart disease.

High level of serum creatinine level was found in patients as compared to normal subject. Same was reported by a group of workers[7]. They suggested a direct relationship of serum creatinine with IHD and it shows a role of renal impairment in the disease.Higher levels of HDL cholesterol were associated with a significant decrease in risk of nonfatal stroke. In contrast, elevated total cholesterol showed a weak positive association with nonfatal strokes. The marked inverse association between HDL cholesterol and stroke seen in hypertensives emphasizes the importance of those modifiable risk factors for stroke known to lower the concentrations of HDL cholesterol[13].

CONCLUSION

Present study found no relationship between serum bilirubin and IHD. Hence the relationships between bilirubin require further clarification, although abnormal intermediary metabolism and antioxident deficiency may be possible linking factors.

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Original Article

Pleural Fluid Estimation and Tubercular Infection in the People admitted with Pleural Effusion: A five Year Survey

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ABSTRACT

Purpose of study: We prospectively conducted this study to evaluate the diagnostic value of Pleural fluid estimation and find the rate of tubercular infection in the people with pleural effusion in city of Lahore. Pleural TB is a common form of extrapulmonary disease and may occur in the presence or absence of pulmonary parenchymal disease on the chest radiograph.

Study Design: Prospective Study.

Place and Duration of Study: This study was conducted in the Biochemistry Department, FJMC, Lahore from May 2010 to Nov. 2010.

Materials and Methods: This study to evaluate the diagnostic value of Pleural fluid estimation and tubercular infection in the people with pleural effusion. All patients aged 22 years and older with clinical and radiographic findings consistent with pleural effusion due to TB admitted to the hospital were evaluated consecutively. The studies were performed on pleural fluid samples: glucose and protein were estimated. Specific gravity was calculated. Cell count, differential cell count, bacterial culture, acid-fast bacilli smear were performed using standard procedures. Specimen was cultured, if effusion contains more than 150 WBC/cumm.

Results: It was observed that the level of fluid glucose was increased in both sexes as compared to the normal reported values. Level of fluid protein was more in both sexes as compared to the normal reported values. However level of pH was neutral in both sexes. Present study found that pleural TB is still a major cause of pleural effusion in the city of Lahore, and microbiological and biochemical investigation may be helpful in diagnosing the disease.

Key Word: Pleural fluid, Exudate, TB.

INTRODUCTION

Tuberculosis (TB) remains one of the most important health problems in the world, with an estimated 8 million new cases annually. Tuberculous (TB) pleural effusion occurs in approximately 5% of patients with Mycobacterium tuberculosis infection[1] (Gopi). Pleural TB is a common form of extrapulmonary disease and may occur in the presence or absence of pulmonary parenchymal disease on the chest radiograph[2,3].

Normally, very small amounts of pleural fluid are present in the pleural spaces, and fluid is not detectable by routine methods. When certain disorders occur, excessive pleural fluid may accumulate and cause pulmonary signs and symptoms. Once a symptomatic, unexplained pleural effusion occurs, a diagnosis needs to be established[3]. In normal subjects, 10 to 20 mL of fluid is spread thinly over the visceral and parietal pleurae. The fluid is similar in composition to plasma except that it is lower in protein (< 1.5 g/dL). On the other, Pleural fluid specific gravity is > 1.018 and glucose may be low (60-100 mg/dl)[4]. Pleural fluid enters from the pleural capillaries and exits via parietal pleural stomas and the lymphatics[5].

Pleural effusions are classified as transudates or exudates. Exudates are due to pleural inflammation (pleurisy), with an increased permeability of the pleural surface to proteinaceous fluid. Lymphatic obstruction may also contribute to accumulation of pleural fluid. All tuberculous effusions were exudative and lymphocytic[6].

Accurate biomarkers of pleural TB are useful, particularly for their negative predictive value[7]. Total cell counts should be obtained routinely for clear or turbid fluids. In the early stages of bacterial infection, fluid is not visibly purulent, many PMNs are present, and bacteria may be seen in a Gram stain. The presence of many small mature lymphocytes, particularly with few mesothelial cells, strongly suggests TB. In pulmonary infarction, there is usually a mixture of lymphocytes, PMNs, and mesothelial cells; RBCs may be numerous. Eosinophils in the pleural fluid have little diagnostic significance but are rarely present in a tuberculous or malignant effusion. The presence of Mycobacterium tuberculosis in the respiratory specimen of patients with pleural effusions is diagnostic of TB in someone with a pleural effusion[6]. However,

tuberculous pleural fluid macrophages and T lymphocytes may contribute to the immunopathogenesis of tuberculosis at a local site of disease[8].

A glucose concentration of < 60 mg/dL (< 3.33 mmol/L) in an exudative pleural effusion indicates TB, malignancy, parapneumonic effusion, or rheumatoid disease. The pH of loculated pleural effusions that complicate pneumonia tends to be < 7.2. These laboratory tests are most useful when integrated with all of the clinical data and other appropriate tests, eg, a tuberculin skin test when pleural effusion from TB is suspected[9].

MATERIALS AND METHODS

Patient Selection: All patients aged 22 years and older with clinical and radiographic findings consistent with pleural effusion due to TB admitted to the hospital between January 1999 to 2005 were evaluated consecutively. Patients were not eligible if they had clinical and/or radiographic evidence of renal, cardiac, or liver failure; lung cancer; pregnancy; or had a Karnofsky Performance Status score less than 50%. In addition, patients were excluded if, during the three months before enrollment, they had hemoptysis or had received antituberculosis therapy or anticoagulant therapy for more than 1 week.

The studies were performed on pleural fluid samples: glucose and protein were estimated by autoanalyzer[10]. Specific gravity was calculated by titrametric method. Cell count, differential cell count, bacterial culture, acid-fast bacilli smear were performed using standard cytospin procedures and haematoxylin-eosin or Papanicolau stains. Cell count was carried out by using Neubar Chamber. Specimen was cultured, if effusion contains more than 150 WBC/cumm, on chocolate agar, blood agar and MacConkey's agar at 37^0c for 24 hour [11].

Analysis: Comparisons between groups were done using student 't' test.

RESULTS

Among patients with pleural TB, 75.2% (93/125) were male and 85% (85/100) were female. The mean age was 45.72 years (SD 19.22; range = 22–85) in male. In female the mean age was 43.74 year (SD 16.09; range = 20–80). Ninety-six percent of the chest radiographs demonstrated unilateral small or medium-sized effusion.

Level of fluid glucose, protein, sp gravity and pH of male and female patients were tabulated. It was observed that the level of fluid glucose was increased in both sexes as compared to the normal reported values (60-100 mg/dl) with a range of 10 to 400 mg/dl. However it was observed that the level of fluid glucose was more in male patients than the female. Level of fluid protein was more in both sexes as compared to the normal reported values (<0.5 gm/dl) with a range of 0.68-7.9 gm/dl. Specific gravity was in near to normal in both sexes as compared to the normal reported values (>1.018) with a range of 1.009 to 1.023. Level of pH was also neutral in both sexes.

Number of polymorphoneutorphils (PMN) and lymphocytes were also count down (data not shown). It was observed that the range of lymphocytes was from nil to 80%. On the other the range of PMN count down was from nil to 3200/cumm. Microbiological assay of only those specimen was performed, where lymphocytes were more than 120/cumm. Possible gram positive microorganisms were Staph aureus, Streptococus pneumoniae, Streptococus pyogens and Actinomycetes. However the possible gram negative microorganism were Hemophilus influenzae, Bacteriolus species, Pseudomonus aureginosa, Klebsiella strains and other enterobacterie were observed in samples of pleural fluid with TB. In some cases Mycobacterim tuberculosis, fungi, viruses especially Coxsaclie B virus was seen.

Table No.1: Level of fluid glucose, protein, sp gravity and pH of male and female patients

Parameters	Male (93)	Female (100)
Age (years)	45.72± SD=19.22	43.74± SD=16.09
Glucose (mg/dl)	146.33±13.42 SD=95.81	126.08±10.37 SD=74.03
Protein (gm/dl)	3.39±0.24 SD=1.75	3.02±0.26 SD=1.86
Sp. Gravity	1.020±0.01	1.020±0.01
pH	7.3	7.2

DISCUSSION

Tuberculous (TB) pleurisy remains a diagnostic challenge. A high regional incidence for TB often correlates with poor financial resources necessitating a cost-effective diagnostic strategy[12].

Among patients with pleural TB, 75.2% (93/125) were male and 85% (85/100) were female. The mean age was 45.72 years (SD 19.22; range = 22–85) in male. In female the mean age was 43.74 year (SD 16.09; range = 20–80). However, a group of workers[13] found that 67% of patients with pleural TB were male. Their mean age was 37.2 years with a range of 18–89. On the other, a study reported[14] reported that the mean age of male patient with pleural TB was 61.00 years. Another study found that pleural effusions in tuberculosis are commonly seen in young adults as an immunological phenomenon occurring soon after primary infection[15].

Present study observed the mean fluid protein was 3.0-3.5 gm/dl. However, a group of workers reported[16] that the pleural fluid, total protein concentration was between 5.1-5.5 g/dl. Our study observed a high level of fluid glucose and it was in accord with a study[17].

Present study was in accord with a study. They found that the mean pH of fluid was 7.33 with a typical clinical presentation for tuberculous pleurisy[18].

It was observed that the range of lymphocytes was from nil to 80%. On the other the range of PMN count down was from nil to 3200/cumm. Our study is in accord with a study[19] who observed that the neutrophils were the predominant cells for the first 24 hours, and then were followed by lymphocytes. The study suggested that this shows that Tuberculous inflammatory and immunological responses in acute tuberculous pleurisy is enhanced rather than suppressed. The study reported that exudative-sensitized lymphocytes in tuberculous pleural fluid reacted to the specific antigen more effectively and produced higher titers of cytokines including interferon gamma (IFN-gamma) than circulating lymphocytes. Thus, activated T lymphocytes concern the production of cytokines at the morbid site and they effectively exert local cellular immunity through the action of such cytokines. The results of a study[9] suggest that tuberculous pleural fluid macrophages and T lymphocytes may contribute to the immunopathogenesis of tuberculosis at a local site of disease. Another study stated that the accumulation of MTB-specific T cells at the site of infection may prove as useful diagnostic marker for an accurate and rapid diagnosis of active TB[20].

CONCLUSION

Present study observed no sputum in patients of both sexes. The fact that most patients with pleural TB do not produce sputum spontaneously may be the reason for the reportedly low yield of sputum culture in this setting[21,22].

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Original Article

Appendecectomy during Pregnancy. A Comparison of Laparoscopic with Open Appendicectomy in Respect of Safety and Morbidity to Mother and Fetus

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ABSTRACT

Introduction: Acute appendicitis is the most frequent non-obstetric emergency that require surgery for the period of pregnancy. The aim of the study was to assess Laparoscopic versus Open method of appendicectomy in pregnant patients in respect of benefits and hazards to patients and fetus.

Study Design: Comparative Study.

Place and Duration of Study: This study was conducted at Alrass General Hospital Saudi Arabia from 1st March 2008 to 1st June 2010.

Materials and Methods: Pregnant women having acute appendicitis admitted in Alrass General Hospital Saudi Arabia and underwent open or laparoscopic appendicectomy were studied.

Results: A total of 118 pregnant women were operated for acute appendicitis. 66(55.9%, n = 118) patients underwent open and 52(44.1%, n = 118) patients underwent Laparoscopic appendicectomy. Mean age ± SD (range) of patients 23.45±4.5 years (18-38) in OA (open appendicectomy) group and 22.00 ± 2.94 years (17-37) in LA (Laparoscopic appendicectomy) group. Mean gestational age was 16.51 ± 4.17 weeks (11-26) in OA and 18.28 ± 4.61 weeks (10-27) in LA group. There were no fetal loss in any group. Pre-term delivery occurred in 6(9.1%) patients in OA and in 4(3.7%) patients of LA group.

Conclusion: In laparoscopic surgery there is no increased risk to mother and fetus as compare to open surgery.

Key Words: Appendectomy, morbidity, mother, fetus.

INTRODUCTION

The acute abdomen in the pregnant women presents a dilemma in which the surgeon must weigh the risks and benefits of potential diagnostic methods and therapy not only to the mother but also to the fetus. Acute appendicitis is the most common non-obstetric emergency that require surgery during pregnancy[1,2]. In pregnancy diagnosis of appendicitis is difficult due to physiologic and anatomic changes occurs during pregnancy[2], These changes result in delayed diagnosis and increases the risk of morbidity for mother and fetus[3]. The diagnosis is made on the basis of history clinical examination with the help of laboratory parameters, ultrasonography and obstetric examination, despite this, the diagnosis still remain challenging. The incidence of appendicitis itself is no higher in pregnant women than in the general population.[4] It has been known for more than century that early treatment is of decisive importance in the management of acute appendicitis[5]. In 1983 Semm was the first Surgeon who removed the appendix via Laparoscopy[6]. Laparoscopy has improved dramatically since its advent, resulting in changes to the operative management of appendicitis and symptomatic cholelithiasis. Although pregnancy was once considered an absolute contraindication to laparoscopic surgery, such surgery now is being performed in all trimesters with increasing frequency: The optimal surgical approach for appendicectomy in pregnancy, whether open or laparoscopic, remains controversial in the literature. While open appendectomy is still the standard of care in many hospitals, several authors report data supporting the laparoscopic approach as first-line therapy. However, most of these studies contained a small number of patients.[7, 8] Use of laparoscopic appendectomy (LA) remains controversial during pregnancy because data regarding procedure safety are limited. The purpose of the study is to evaluate the outcome of Laparoscopic appendecectomy in pregnant women and compared to the results of open Appendecectomy.

MATERIALS AND METHODS

Pregnant women operated either Lparoscopically or open for acute appendicitis between 1st June 2005 to 10th March 2010 in Al-Rass General Hospital Qassim KSA, were included in this study. The evaluation of pregnant women (n=118) undergone appendicectomies, was based on medical history, clinical findings; pathology reports ultrasonography and obstetrician opinion to confirm the diagnosis. [,then intraoperative and histological findings and further course of the

pregnancy as recorded in patient file.] Pregnancy outcome information such as pre-term delivery(delivery before 37 week) birth weight, fetal losses, gestational duration, and congenital malformation were obtained from patients and patient's obstetrician. Post-operative complications such as haemorrhage wound infection, intra-abdominal abscesses, small bowel obstructions, incisional hernia were noticed.

For Laparoscopic appendicectomy open technique was used to create pneumoperitoneum & introduction of first trocar (10mm sub-umbilical). Three ports were used for Laparoscopic appendicectomy and patient was placed in supine position. The two subsequent trocar (5mm) were introduced under vision in left lower quadrant above anterior superior iliac spin and suprapubic area. Mesoappendix and appendix bas was ligated with endoloop and divided with scissor; only bipolar diathermy was used when needed. Appendix was extracted in endoscopic bag. The pneumo-peritoneum pressure was kept usually between 10-12 mmHg. In open technique McBurney's or Lanz incision was used. In both group if appendix found perforated or there were abscess peritoneal lavage done using volumes of warmed saline and drains were used accordingly. Low dose heparin and antibiotic was given prophylactic ally to all patients pre-operatively.

Statistical Analysis: Data were analyzed in statistical program SPSS version 20. Categorical variables (frequencies & percentages) such as trimesters, post-operative complications were presented as n (%) and chi square test was used to compare the proportions between the groups (OA & LA). Continuous variables like age (in years), gestational age(in weeks), duration of surgery (in minutes), and hospital stay (in days) were presented as Mean ± Standard Deviation and student *"t"* test (2 failed) was applied to compare the means between the groups (OA & LA). All the data were calculated on 95% confidence interval P value ≤ 0.05 was considered as statistically significant level for all the comparisons.

RESULTS

A total of 118 pregnant patients who underwent surgery (laparoscopic & open) for acute appendicitis were studied. Sixty six 66(55.9%) patients underwent open appendicectomy, and in 52(44.1%) patient appendicectomy done laparoscopically. Twenty 20(16.94%) were operated in 1st trimester, 88(74.57%) during the second trimester, and 5(4.23%) during the third trimester. No any laparoscopic procedure converted to open procedure. For all patients complete follow-up up to delivery was achieved. There was no difference between groups (open & laparoscopic appendicectomy) in surgery delay after arrival at the hospital.

In our series, the mean age ± SD (range) of patients 23.45±4.5 years (18-38) in OA (open appendicectomy) group and 22.00 ± 2.94 years (17-37) in LA (Laparoscopic appendicectomy) group. Mean gestational age was 16.51±4.17 weeks (11-26) in OA and 18.28 ± 4.61 weeks (10-27) in LA group. Mean operative time was 31.89 ± 10.5 minutes (18-55) in OA and 48.01±15.9 minutes (32-85) in LA patients.

Table No.1: Frequency of post-operative complications (n = 118)

Post-operative complications	OA (n=66)	LA (n=52)	Total	P value
Haemorrhage	2(3.03%)	1(1.92%)	03(2.54%)	0.70
Wound infection	7(10.60%)	2(3.84%)	09(7.62%)	0.29
Intra-abdominal abscess	2(3.03%)	-	02(1.69%)	0.50
Small bowel obstruction	3(4.54%)	-	03(2.54%)	0.25
Incisional hernia	1(1.51%)	-	01(0.84%)	0.99
Neonatal loss	-	-		
Pre-term delivery	6(9.09%)	4(3.7%)	10(8.47%)	- 0.89
Congenital malformation\	0	0	0	-

Table No.2: Demographic details of the patients (n = 118).

Demographic variables	OA (n=66)	LA(n=52)	Total	P value
Mean Age of patients(years)	23.45 ± 4.5(18-38)	22.00 ± 2.94(17-37)	-	0.052*
Mean Gestational age at the time Surgery (weeks)	16.51 ± 4.17(11-26)	18.28 ± 4.61 (10-27)	-	0.031*
TRIMESTER(Patients)				
First	8(12.12%)	12(23.07%)	20(16.94%)	0.52
Second	51(77.27%)	37(71.15%)	88(74.57%)	
Third	7(10.60%)	3(5.76%)	10(8.47%)	
Duration of Surgery(minutes)	31.89 ± 10.5(18-55)	48.01 ± 15.9 (32-85)	-	0.007*
Hospital stay (post-operative in days)	3.98 ± 1.5 (2-7)	2.3 ± 1.1 (1-4)	-	<0.0001**

* P value is statistically significant

** P value is statistically highly significant

Post-operative haemorrhage occurred in 2(3.03%) patients of OA and in 1(1.92%) patient of LA group and this was managed conservatively. Wound infection found in 7(10.60%) in OA and in 2(384%) patients of LA group there was purulent discharge from wound . In 2(3.03%) patients of OA group intra-abdominal abscess in 3(4.54%) small bowel obstruction, these complications were managed conservatively , these two complications not found in LA group, and in 1(1.51%) patient of OA group incisional hernia developed , no incision hernia found in LA group

There was no neonatal loss in any group. Pre-term delivery occur in 6(9.1%) patient in OA and in 4(3.7%).patients of LA groups. No congenital deformity detected in any neonates of both group. After surgery, mean hospital stay was 3(2-7) days in OA, and 2(1-4) days in LA group.

DISCUSSION

Pregnancy has long been considered as contra-indication for Laparoscopic surgical procedures[9], because of suspicious of teratogenicity in 1st trimester and preterm delivery during second and 3rd trimester. Direct uterine trauma, decrease uterine blood flow due to the pneumoperitoneum, and toxic narcotic drugs are possible cause [10]

Nowadays Laparoscopic procedures can be safely performed [11-13]. The 2nd trimester is considered the safest period to perform any surgery because the small uterus is less susceptible to traumatic injuries and have less chance to teratogenicity[14]. Hunter et al.[15] investigated and found that CO2 pneumoperitoneum have minimal impact on the mother and the fetus when using intraabdominal pressure of 15mmHg or less.

There are more chance that risking the enlargement of incision, from manipulation and traction to get the appendix exposed in open procedures. Manipulation to the utrus is believed to increase the risk of preterm delivery[16, 17] ranging from 15-45 %[18-20].

The Laparoscopic approach offer not only a minimally invasive approach to the abdominal region, whereby the traction to the utrus can be avoided, and the incision can be tailored to the unpredictable position of the appendix , it offer an opportunity for a different diagnosis from the good visualization of other abdominal organ.

To diagnose the case of acute abdominal pain in pregnant patient and to reduce aggressive surgical approach and also to reduce fetal risk, Imaging is important tool. Sonography is often inconclusive and CT-Scan is not preferred because of radiation exposure [21]. MRI is safe and highly sensitive (97-100%) in patients with an inconclusive sonography [22], but this imaging technique has not yet been implemented, because of high cost and limited availability.

In LA wound infection rate also reduce, because the appendix is extracted within the trocar, and does not touch the abdominal wall[23]. Some studies shows that, the risk of intra-abdominal abscess in patients with complicated appendicitis increased after Laparoscopic appendicectomy[24]. Other studies like our studies did not observe any significant increase in complication[25-27].

In our study results of Laparoscopic appendicectomy can be compared to many series in which laparoscopic appendicectomy has special advantages for patients with complicated appendicitis[28-30].

In addition to patient, fetal loss is one of the important consideration when selecting the surgical approach(open or Laparoscopic) in pregnant patients for acute appendicitis.

McGory et al [31] reported a higher rate of fetal loss after laparoscopic versus open appendicectomy (7% vs 3%). Colin A.Walsha et al[32] studyalso shows higher rate of fetal lose in Laparoscopic appendicectomy(6%) [32]. Contrary to these studies our study and other studies shows low rates of fetal demise after laparoscopic appendicectomy in pregnant patients [33-39]. In our study there was no fetal loss either after open or laparoscopic appendicectomy. It shows that operative approach did not influence fetal loss. Our findings also supported by other studies[33-40].

Pre-term delivery is another important consideration. In our study the preterm delivery rate was 3.7% in Laparoscopic and 9.09% in open appendicectomy, while in Eran Sadot et al [40] study it was 29% in laparoscopic vs 19% in open.

CONCLUSION

Laparoscopic surgery is safe as open for acute appendicitis in pregnant patients in all trimester, & surgeon is much satisfactory and confident about diagnosis, as it has therapeutic and diagnostic advantages. In Laparoscopic surgery there is no increased risk to mother and fetus as compared to open surgery.

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Original Article

Magnetic Resonance Imaging of Lumbosacral Spine to determine the cause of Sciatica

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ABSTRACT

Objective: To analyze the lumbosacral spine using MRI to determine the most common pathology responsible for sciatica.

Study Design: Descriptive cross sectional study

Place and Duration of Study: This study was conducted at the Department of Radiology, Military Hospital Rawalpindi from October 2005 to April 2006.

Materials and Methods: One hundred patients presenting with unilateral or bilateral sciatica were studied. MRI lumbo-sacral spine was the modality used to determine the anatomical factors responsible for sciatica. These factors included disc prolapse, osteophytes formation, and thickening of ligamentum flavum.

Results: It was seen that prolapsed disc was the most common cause of sciatica (found in 71% of the patients). Out of these cases, disc bulge was found in 50% of the patients, protrusion / herniation in 37%, and an extruded disc fragment in 7%. Osteophytes and hypertrophied facet joints were seen in 7% of the cases, while ligamenta flava were thickened in 22%. 38% of the patients were in the 4th decade of life.

Conclusion: Disc bulge is the most common pathology of lumbosacral spine in patients presenting with sciatica.

Key Words: sciatica, intervertebral disc

INTRODUCTION

Sciatic nerve is the longest nerve in the body. The term "sciatica" refers to the pain that radiates along the path of this nerve, from lower back into the buttocks and legs. The discomfort can range from mild to moderate incapacitation. It can be accompanied by muscle weakness, numbness or tingling sensation. Rather than a disease by itself, sciatica is the symptom of pathology, such as a herniated disc that puts pressure on the nerve. [1]

The first clinical clue to neurologic impairment usually is a history of sciatica: sharp pain radiating down the posterior or lateral aspect of the leg, often associated with numbness or paresthesia. Pain radiating below the knee as opposed to pain limited to the buttocks or thigh is more likely to represent true radiculopathy. Pain is sometimes aggravated by coughing, sneezing or the Valsalva maneuver. [2]

The most common cause of sciatica is a herniated intervertebral disc, which occurs most commonly between the ages of 30 and 55 years. Imaging identifies herniated discs in many persons with low back pain [3-6]; thus only minorities of these discs are therapeutically important. [7, 8]

More than 95% of clinically important lumbar disc herniations occur at the two lowest discs and involve the L5 or S1 nerve roots. Thus the most common neurological syndromes are weakness of the ankle and great toe, sensory loss along the medial foot (L5) or diminished planter reflex and sensory loss along lateral aspect of foot (S1). [9, 10]

Spinal stenosis may be caused by bone (e.g. facet hypertrophy), soft tissue (e.g. bulging disc or thickened ligamentum flavum) or both. Like other degenerative conditions, it is more common in older adults. As many as 20% of asymptomatic adults 60 years or older have imaging evidence of spinal stenosis [3], but the prevalence of symptomatic stenosis is unknown.

The spinal canal is bound anteriorly by vertebral bodies and intervertebral discs, backed by the posterior longitudinal ligaments. Posterolaterally it is limited by pedicles and laminae lined by ligamenta flava. The spinal cord descends from the medulla oblongata, commencing at about the level of foramen magnum, and terminates at the conus medullaris, which lies between the lower border of 12th dorsal and upper border of 3rd lumbar vertebra. The nerve roots pass laterally from the anterolateral and posterolateral margins of the cord at each segment. [11] The nucleus pulposus of an intervertebral disc represents the remains of the notochord. The annulus fibrosis of the intervertebral disc is derived from the mesenchyme between adjacent vertebral bodies. [12]

On MRI scans, the annulus fibrosis, spinal ligaments, dura matter and cortical bone of vertebrae give low signals. The epidural and para spinal fat provide high signal intensity on most commonly used sequences. The gel of nucleus pulposus of the normal intervertebral disc gives high signal intensity on T2 weighted sequences. In this way the gross anatomy is well shown. [11]

MRI provides clinician with a non-invasive mechanism for viewing lumbar anatomy in great detail. [13] Only limitation of MRI is patients with metallic implants. It

is also not recommended in first trimester of pregnancy [14]

Anatomy is best studied with T1-weighted images. T2-weighted acquisitions yield physiologic information about the disc and opacify the thecal space and its contents. [15]

MATERIALS AND METHODS

This descriptive study was carried out at Radiology Department, Military Hospital Rawalpindi. It was of 6 months duration from October 2005 to April 2006.

The sampling technique was non-probability purposive. Hundred voluntarily participating patients were selected, irrespective of gender.

Presenting complaints were unilateral or bilateral sciatica. Patients suffering from trauma, chronic debilitating disease, and bed ridden patients were excluded.

Non-contrast MRI scan of the lumbosacral spine was performed to diagnose sciatica by observing different components of the lumbosacral spine. Quantum gradient 1.5 Tesla Magnetom Symphony MRI scanner was used. MRI protocol included T1 and T2 weighted images in both axial and sagittal sections. Plain MR myelography images were also taken. Slice thickness was 04mm and distance factor was 10%.

Disc morphology and position of disc prolapse were studied. Presence of osteophytes, facet joint hypertrophy and thickness of ligamenta flava was noted. Patients' age and gender were recorded.

For classifying disc prolapse into bulge, protrusion and extrusion, classification introduced by Jenson et al was used [16]

Bulging was defined as circumferential extension of the disc beyond the endplates.

Protrusion was referred to as focal or asymmetric protrusion of the disc beyond the endplates but in connection with the parent disc and with the base of protrusion broader than any other dimension.

Extrusion was defined as focal protrusion of the disc beyond the end plates without connection with the parent disc.

RESULTS

Patients were between 20-70 years of age. 67 of them were males while 33 were females. There was no previous history of spinal surgery or spinal tumor. None of the subjects dropped out or were lost in any part of the study.

38% of the patients presented with right sided sciatica. Left sided sciatica was the presenting complaint in 54% patients while 8% had bilateral sciatica.

04 patients showed no abnormal findings on MRI of lumbosacral spine. In patients with abnormal findings, prolapsed disc was the most common cause (71%). Out of these cases, disc bulge was found in 50% of the patients, protrusion / herniation in 37%, and an extruded disc fragment in 7%. Disc prolapse was posterolateral in 38%, central posterior in 37% and para central in 21% of the patients.

7% of the patients showed osteophytes formation as well as hypertrophied facet joints. Ligamenta flava was found to be thickened in 22% of the cases.

Patients were divided into age brackets, with each bracket representing a decade. 38% of the patients presented in the 4th decade of life i.e. between 31-40 years. Mean age of presentation was 41.45 years with standard deviation of 9.48.

DISCUSSION

Sciatica is a major public health problem because of its high prevalence. Lifetime prevalence in developed countries is estimated up to 84% in the general population. [17]

Out of the 100 patients in this study, 67 were males and 33 were females. In an international study, it was seen that sciatica is most common among blue collar workers and motor vehicle drivers. [18]

In another international study, it was noted that males are more commonly affected than females in cases of lumbar disc herniations by a ratio of 3:2. Prolonged exposure to a bent forward working posture is correlated with increased incidence of herniated intervertebral discs. [19] In our society, majority of the drivers as well as office workers are males. This explains the high prevalence of the disease in male patients.

Disc bulge was the most commonly encountered variety of disc prolapse with 50% of the patients showing a bulging disc on MRI. This finding follows the result of a national study, [20] which states that disc bulge is the most pattern of disc disease. However, in another national study conducted in the Radiology Department of Aga Khan University Hospital Karachi, it was seen that disc herniation was the most frequent finding. Disc extrusion was seen in 18% of patients. [14] In quite a similar international study in which abnormal MRI findings and their prevalence and associations with low back pain were studied in 40 year old patients, the results showed that about 25-50% of patients showed disc bulge. [21]

Other findings seen in patients presenting with bilateral sciatica were facet joint hypertrophy and osteophytosis. 7% of the patients showed osteophytes formation and hypertrophied fact joints. Out of this, majority of the patients gave history of bilateral sciatica. It showed that patients with bilateral sciatica had more degenerative changes.

Maximum number of patients (38%) were in their 4th decade of life i.e. 31-40 years of age. 31% belonged to the 41-50 years age bracket. Only one patient presented in the 7th decade of life. In one of the international studies, it was stated that peak age for occurrence of disc prolapse is between 20-45 years. [19] In a national

study, it was seen that disc disease is most common in the 30-39 year age group. [20] The results of my study have also verified these findings.

In a study connected in the Department of Neurosurgery, Lahore General Hospital Lahore, it was observed that the largest number of patients (35%) presented in fourth decade of life. 90.6% patients had prolapsed intervertebral disc at a single level and 9.4% at multiple levels. Most of the patients (92.4%) had a prolapsed disc at L4-5 and L5-S1 levels. [22]

CONCLUSION

It is concluded that prolapsed disc is the most common cause of sciatica. Out of the three categories of prolapsed disc i.e. bulge, protrusion and extrusion, disc bulge accounts for the commonest pathology.

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Original Article

Uric Acid, Creatinine and Proteinuria: Do They Have any Relationship with Leptin During Pre-Eclampsia?

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ABSTRACT

Objective: To determine the relationship between serum leptin, uric acid, creatinine and proteinuria during pre-eclampsia.

Study Design: Comparative cross-sectional study.

Place and Duration of Study: This study was carried out in the department of physiology, Basic Medical Sciences Institute, JPMC, in collaboration with the department of Gynaecology and Obstetric, JPMC from Jan 2007 to Dec 2007.

Materials and Methods: For this purpose 45 primigravidas with normal pregnancy and 45 primigravidas with pre-eclamptic pregnancy were selected who were in their third trimester. All the subjects were of the same maternal age, gestational age, height and weight. Serum leptin levels were determined by immunoenzymometric assay and total lipid profile was determined by enzymatic colorimetric method. Serum uric acid and serum creatinine were determined by uricase method and jaffe's method by photometric system. To perform the dipstick urine analysis, multistix URS-10 test strips were used.

Results: The study included 90 patients, divided into two groups. Serum uric acid was found to be significant in pre-eclamptic group ($p<0.001$) but there was no difference between serum creatinine of the two groups. No significant correlation was found between serum leptin, uric acid and creatinine. It was found that the level of leptin rises with the level of proteinuria.

Conclusion: From this study, it was concluded that serum leptin levels during pre-eclampsia were not strongly associated with serum uric acid and creatinine but relation with proteinuria was found to be significant.

Key Words: Leptin, Pre-eclampsia, Uric acid , Creatinine, Proteinuria

INTRODUCTION

Leptin is a versatile 16kDa peptide with a tertiary structure resembling the long chain helical cytokine family. It is mainly produced by adipocytes and was originally thought to act only as satiety factor[1]. It has been observed that leptin functions in a variety of other physiological processes including immune and reproductive functions, hematopoiesis and glucose homeostasis[2].

Leptin is also synthesized by placenta and cross-sectional studies suggest that leptin concentration peaks in the 2nd trimester and remains elevated until parturition[3]. Maternal circulating leptin concentration is significantly higher in pregnancies complicated by pre-eclampsia than gestational age matched controls[4]. Pre-eclampsia (PE) is a multisystem disorder of 2nd half of pregnancy characterized by generalized endothelial dysfunction and oxidative stress[5]. Leptin has also been reported to induce oxidative stress in cultured endothelial cells[6]. Leptin may contribute to increase uric acid concentration as plasma uric acid concentrations are increased by oxidative stress[7]. Impaired renal function is a pathophysiological component of PE and may effect creatinine clearance, also measured increase in plasma leptin concentration may reflect reduced renal clearance[8].

Therefore the present study was designed to assess whether any relationship exists between serum leptin and uric acid, creatinine and proteinuria during pre-eclampsia.

MATERIALS AND METHODS

This study was carried out in the department of Physiology, Basic Medical Sciences Institute, JPMC, in collaboration with the department of Gynaecology and Obstetrics, JPMC.

The study was performed on 90 pregnant women of age ranging between 16-32 years and gestational age between 28-38 weeks. All the subjects were briefed about the nature of the study and an informed consent was taken.

Inclusion Criteria:

- 45 normotensive women with singleton pregnancies were taken as control without any previous history of hospitalization or any medical complication.
- 45 Obstetric patients with singleton pregnancies were diagnosed as having PE according to ISSHP (International society for the study of

hypertension) when they presented with blood pressure ≥ 140/90mmHg on 2 separate occasions 4hrs apart or a single recording of a diastolic blood pressure of 110mmHg in association with proteinuria ≥ 2+ on dipstick testing.

Exclusion Criteria:

- Pre-existing chronic hypertension.
- Pre-existing diabetes.
- Gestational diabetes.
- Diseases involving kidneys.
- Diseases involving liver.
- Known history of any peripheral vascular disease.
- Twin pregnancy.
- Smoking or any drug addiction.

All the subjects included in the study were primigravidas with same maternal age, gestational age, height and weight. A detailed general physical examination was done and history was taken.

The blood samples were collected under strict aseptic measures. Each sample was labelled with patient's name and identification number. Samples were analyzed in one run at the end of the study. Serum leptin was determine by immunoenzymometric assay. Serum uric acid and serum creatinine were determined by uricase method and jaffe's method respectively by photometric system. To perform the dipstick urine analysis, multistix URS-10 test strips were used.

Data analysis was done on computer package SPSS (Statistical Package for Social Sciences) version 10.0. The Statistical significance of difference between the mean values of two groups was evaluated by the student's "t" test. The difference in the mean values of the two groups was regarded as statistically significant, if the P-Value was less than 0.05 and it was taken as highly significant, if P-Value was less than 0.001**.** Correlation Coefficient was detected using Pearson Coefficient of Correlation SPSS-10.0.

RESULTS

In this study 90 women were included. Among which 45 were normotensive primigravidas and 45 were PE primigravidas. The pre-eclamptic group was again divided according to severity of the disease into mild PE (n=28) and severe PE (n=17). Maternal serum leptin levels were significantly higher in PE group than in control group.

Results are summarized in table1-3. Table 1 shows the comparison of serum uric acid and creatinine between control group and PE. Serum uric acid shows a statistically significant increase (P<0.001) in PE group as compared to controls whereas serum creatinine shows a non-significant change between the two groups. On correlating serum uric acid and serum creatinine with serum leptin (table2), a non-significant correlation was found. Table 3 shows serum leptin levels according to the level of proteinuria. Proteinuria of 1^+ and 2^+ were not found to be significant in relation to leptin but proteinuria of 3^+ was found to be significantly associated (P<0.001) with serum leptin.

Table No.1: Serum uric acid and serum creatinine in normal pregnant women (controls) and in pre-eclamptics

(All the values are expressed in Mean±S.D)

Variables	Group A Control (n=45) Mean ±S.D	Group B Pre-eclamptic (n=45) Mean ±S.D
Serum uric acid (mg/dl)	3.01±0.55	5.56±0.92*
Serum creatinine (mg/dl)	0.64±0.10	0.68±0.12

*P<0.001 when compared to control.

Table No.2: Correlation coefficient (r) of serum uric and serum creatinine vs serum leptin in normal pregnant women (controls) and in pre-eclamptics

Variables	Group A (control (n=45) Serum leptin	Group B (Pre-eclamptic) (n=45) Serum leptin
Serum uric acid (mg/dl)	r =-0.06	r=-0.06
Serum creatinine (mg/dl)	r =-0.22	r =0.22

Table No.3: Serum leptin levels according to proteinuria in pre-eclampsia

Proteinuria	No of subjects	Serum leptin (ng/ml) in P.E (n=45) Mean ± S.D
1+	18	52.1±4.23
2+	13	52.0±5.56
3+	11	86.1±5.58*
4+	3	77.6±13.38

* Significantly higher as compared to 1+ and 2+ (p< 0.001)

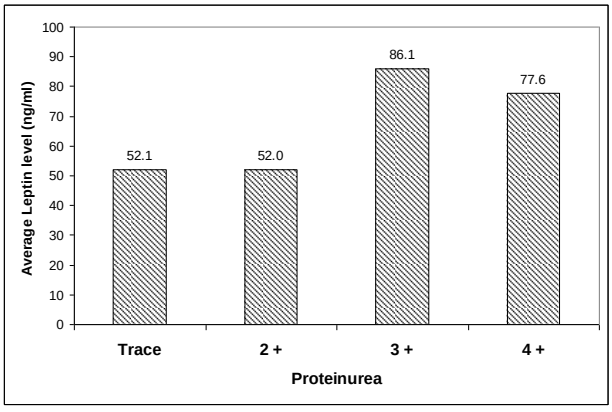

Figure No.1: Serum leptin level according to proteinuria in pre-eclampsia

DISCUSSION

PE is a complex polygenetic trait in which maternal and fetal genes, as well as environmental factors are involved[9]. The cause remains largely unknown but oxidative stress and generalized inflammatory state are features of the maternal syndrome[10]. Release of proinflammatory cytokines such as TNF-α and reactive O_2 species from ischemic placenta in PE may also contribute directly to oxidative stress[5].

It has demonstrated that leptin increases in situations associated with higher levels of cytokines as in PE[11]. Changes in plasma leptin concentration in PE correlates with uric acid concentration[12]. Both uric acid and leptin may be the markers of PE[13]. Contrary to these findings, the results of our study do not find any positive correlation between between serum leptin and uric acid but uric acid levels were found to be significantly associated with PE.

Our findings do not reveal any difference in the serum creatinine level between the two groups studied nor it finds any correlation between serum leptin and creatinine during PE which are in agreement with the findings of Sebiha Ozkan et al[8], and Anim-Nyame et al[12]. Thus it seems unlikely that hemoconcentration or impaired renal function which are pathophysiological components of PE, contribute to high leptin observed in the disease. When the level of proteinuria was observed in relation to leptin, it was found that as proteinuria increases, the level of leptin also increases. The leptin level were found to be significantly associated with proteinuria.

CONCLUSION

From this comparative cross-sectional study it is concluded that leptin levels during PE are not found to be associated with uric acid and creatinine but a significant association was found between serum leptin and proteinuria. The mechanism responsible for this and the role played by leptin requires further study on a larger scale.

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Original Article

Vitamin D Status in Young Female Reported with Backache

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ABSTRACT

Objective: To evaluate the Vitamin D status in young females who reported with the complaint of backache. This study was conducted in a private hospital in Karachi from Aug. 2010 to Dec.2011.

Design of Study: A descriptive prospective study

Place and Duration of Study: This study was conducted in two private hospitals Memon Medical Complex and Mamji Hospital from Aug 2010 to Dec. 2011.

Materials and Methods: In this study 113 adults females were taken. The age range between 21-35 with mean age 27.2 $\pm$ 4.6 years. They attended the hospital with complaint of backache. The patients were enrolled through a Proforma with an inclusion and exclusion criteria. The Proforma recorded the basic information i.e. age, marital status, pregnancies, occupation, work load, duration of sun exposure, area of skin exposed, veiled, type of residence and dietary habits. The serum vitamin D level and simultaneously the serum calcium, phosphorus and alkaline phosphatase. X-ray Lumbo/Sacral spine and pelvis were taken. All these tests were got done from a well reputed laboratory.

Results: Total of 113 cases, age ranging from 21-35 years with mean 27.2 $\pm$ 4.6. All were females. Subjects were predominantly married 84 (74.33 %), 54 (64.28%) had multiple pregnancies, 29 (25.66%) were house wives, 84 (74.33%) were working women, 34 (30.08%) were doing heavy work, sun exposure was almost negligible, 80 (70.79%) were veiled, 30(26.54%) had opened face, 11(9.73%) had opened face and forearm, 97(85.84%) were lived in flats, dietary habits were poor, black burqa were using outside. Vitamin D was deficient in 83 (73.45%) cases, insufficient in 21 (18.58%) cases and near normal in 9 cases(7.96%). Inspite most of them belonged to middle class socio-economic status. The calcium was low in 90 cases (79.64%) while phorphorus was low in 83 cases (73.45%) and alkaline phosphate was not correlated positively. The X-ray of L/S spine and pelvis showed straightening of the spine and osteopenia.

Conclusion: Vitamin D deficiency was the main reason of back pain of the young females.

Key Words: Vitamin D deficiency, Young females, Veiled, Sun exposure.

INTRODUCTION

Defective skeletal mineralization in adults leads to a condition where the people could complain with bone pain [1 2 3] any where in the body, most commonly in the lumbo-sacral spine. The Vitamin D play an important role [4] in the mineralization of a bone. It increases the intestinal absorption of calcium and related minerals. Vitamin D is a group of fat soluble, the two major forms of which are Vitamin D2 (ergocalciferol) and Vitamin D3 (cholecalciferol). Vitamin D obtained from sun exposure. The primary source of vitamin D in humans is photo activation (in the skin) of 7-dehydrocholesterol to cholecalciferol which is then converted in the liver to 25-hyderoxycholecalciferol and further converted by renal to active metabolite 1,25-dihydroxycholecalciferol.

The major role of Vitamin D in the body is for calcium and phorphorus. It increases their absorption in the intestine and reabsorption of calcium from kidneys. It is also necessary for bone growth and bone remodeling.[5] Without Vitamin D the bones are liable to become thin and brittle.[6] The incidence may vary and depends upon various factors. 29 % deficient in United States 36 % in U.K. [7 8] Vitamin D deficiency [9] may arise from in sufficient sun exposure [10 11], malnutrition,[12] malabsorption through any reason and patient with kidney diseases. Drugs like Anticonvulsant i.e phenytoin,carbamazapine, valproate and Phenobarbital may inhibit hepatic production of 25(OH)D. The genetic component of Vitamin D deficiency may be manifested early in the life. The osteomalacia [13 14 15] continue to be a common problem in the topical countries in spite of sun exposure. Calcium deficiency may occur in elderly, malnourished, and those on taking of excessive wheat bran.

In 2000 a study was conducted in Dehli which showed the prevalence of vitamin D deficiency to be 90 %. As we are living in an area where we have plenty of sunshine. Our culture and tradition placed the women on a side where they will be less exposed to sun, live in a small and crowded flat, had multiple pregnancies and less awareness of the nutritional supplements. These all lead women to an edge to face nutritional deficiencies. The primary objective was to evaluate vitamin D status in young females presented with complaint of backache in the OPDs.

MATERIALS AND METHODS

A descriptive prospective study, conducted in a private hospital of Karachi, from Aug. 2010 to Dec. 2011. In the study 113 adults females were included between ages ranging from 21-35 years.

Inclusion Criteria:

- Adult female
- Age less than 40
- Resident of Karachi
- No H/o trauma.

Exclusion Criteria:

- Subject with known Vit. D deficiency
- History of any metabolic bone disease.
- History of malabsorbtion
- History of trauma
- History of joints disease
- On Vitamin D and calcium supplements.

A Proforma was completed to determine the age, marital status, pregnancies, occupation, work load, duration of sun exposure, area of skin exposed, veiled, type of residence and dietary habits.

The Vitamin D level with serum calcium, phosphorus and alkaline phosphatase were taken. X-ray lumber/sacral spine and pelvis were performed in every case. A level of Vitamin D less than 20 was considered deficient while less than 30 was insufficient.

Serum albumin and Prothrombin time were done in all cases to exclude malabsorption Serum calcium and phosphorus help to label positive vitamin D deficiency.

Analysis was performed with SPSS version 17.

RESULTS

Total of 113 cases, age ranging from 21-35 years, 27.2 $\pm$ 4.6. The basic characteristics were given in table 1.

Table No.1:

Basic Characteristics of Study	n 113
Sun Exposure	23 (2 Hours)
Age	
Group 1 <25years	69 (61.06%)
Group 2 >25years	44 (38.93%)
Marital status	
Married	84 (74.33%)
Unmarried	29 (25.66%)
Pregnancies	
Two	30 (35.71%)
> two	54 (64.28 %)
House wives	29 (25.66%)
Working woman	84 (74.33%)
Residence	
Flat	97 (85.84%)
Banglow	16 (14.15%)

All were females. Subjects were predominantly married 84 (74.33%), 54 (64.28%) had multiple pregnancies, 29 (25.66%) were house wives, 84 (74.33%)were working women, 34 (30.08%) were doing heavy work, sun exposure was in 23 (20.35%) cases, 80 (70.79%) were veiled, 22 (19.46%) had opened face, 11(9.73%) had opened face and forearm, 97 (85.84%) lived in flats, dietary habits were poor, black burqa was being used outside. The vitamin D is low in 92% of cases.

Vitamin D was deficient in 83 cases (73.45%) and insuffient in 21 cases (18.58%) and Vitamin D were near normal in 9 cases (7.96%) .The data was seen in Table No.2. The calcium was low in 90 cases (79.64%) while phorphrus was low in 83 cases (73.45%) and alkaline phosphate was not correlated positively. It is shown in Table No. 3. Inspite of such low Vitamin D X-ray of L/S spine and pelvis had not showed any classical radiological finding of Vitamin D deficiency except straightening of the spine and osteopenia.

Table No.2:

No. of Patient	Vitamin D status		
113	Deficient	Insufficient	Normal
	83 (73.45 %)	21 (18.58%)	09 (7.96%)

Table No.3:

Data	Minimum	Maximum	Mean +SD
Age of Patient	21 years	35 years	27.2 $\pm$ 4.6
Serum Vit. Dmg/ml	1.9	55.6	11.76 $\pm$ 6.9
Serum calcium mg\dl	6.9	9.3	7.7 $\pm$ 0.63
Serum Phosphorus mg\dl	2.0	4.4	2.57 $\pm$ 0.9
Serum Alkaline phosphastase Iu/L	125	237	176 $\pm$ 43.13

DISCUSSION

In an area with plenty of sunshine it was very unexpected to have such a low vitamin D status in our young females. It may be because of young females who are deprived from food had early marriages and multiple pregnancies, usually complain of body pain mainly backache. They are looking healthy and most of them are overweight. Clinically most of them had no sign of any organic and metabolic disease nor they complained of any gastro-intestinal upsets in past.

The females of fertile age group, whether married or not, they all had either deficient or insufficient Vit D levels. The main cause of Vitamin D deficiency behind it is not the scope of this study but we saw the actual status of Vit D in young female resident of a place where sunlight is quite sufficient through out the year. There are many studies done in United States , Italy , India,[6] China, Turkey,[16] Germany,[17] Saudi Arabia,[12] and Iran[18]regarding the Vit D status and they found similar results..

This high prevalence of Vit D deficiency in this age group had multiple explanations; on one side the social norms limit her activity while on the other side

nutritional lacking lead to this situation. This is a very common issue in our young females so this study was conducted to see the real status of Vit D in young females who reported to OPD with backache. The small flats which are not on the sun facing side and are usually over crowded and our females are also not be fond of playing healthy games. Parents have fear to be darkening[19] of skin of their daughters so to avoid sun exposures and our females had unique taste of not taking thing like fresh milk, cheese, yogurt, butter and other sources of Vit D.[20]

In this study the majority of the females were married and had multiple pregnancies. The sun exposure was almost negligible, in 23 cases for less than two hours in a day and the residence were in small flats. Our females used veil[21] when they go outside though it is a religious activity and it had its importance but when ever she had time and space so she should try to be exposed to sunlight. The females in this study were not suffering from any known gastro-intestinal disease and their serum albumin, prothrombin time and stool detailed report were normal. The cause of Vitamin D deficiency is not the scope of this article, it need further studies to elaborate but it is suggested that lack of sun exposure, lack of healthy dietary habits and excessive requirement might be the possible cause of vitamin D deficiency in this group. This all lead, to the chronic pain in the body in general and particularly in back and long bones. [22 23 24 25 26 27]

In short we need to take serious action for the betterment either in the form of good nutritional policies for our females and should emphasize on the construction of the buildings that should keep space for sun to enter in every home Beside this we should motivate our female to do play healthy games and take healthy balanced diet.

CONCLUSION

This high prevalence of Vit. D in our young females will be eye opening and we should take serious action to motivate women for healthy diet, playing games and try to built building with good sun exposure in every home.

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Original Article

Perinatal Outcome in Patients with Preeclampsia

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ABSTRACT

Objectives: To describe perinatal outcome in patients with preeclampsia.

Design: Descriptive Hospital based study

Place and Duration of Study: Department of Obstetrics and Gynecology, Nishtar Medical College/Hospital Multan from September 2007 to September 2008.

Materials and Methods: Patients admitted through the outpatient department and labour ward with gestation age >20 weeks and diasystolic blood pressure of ≥ 90mmHg on more than one occasion 6 hours apart and proteinuria ≥ 300mg/24 hours or two mid stream or catheter specimens of urine with ≥++ proteins on reagent strip testing were included in the study. Besides detailed clinical history, complete blood count, renal function tests, liver function tests, coagulation screen and 24 hours urine protein were done. After the baseline obstetrical ultrasound, two weekly growth scans were done, growth charts were maintained along with umbilical artery Doppler studies, Patients were counseled for planned hospital delivery and time and mode of delivery was decided. Babies were managed by the Pediatricians and if needed shifted to neonatal intensive care unit. The babies were followed for 7 days after birth.

Results: 73 patients were managed during the study period. 22 patients had intrauterine growth restriction (IUGR) 23 babies were born preterm, 13 preterm babies had IUGR and 10 out of these were admitted to neonatal intensive care unit. There were 5 deaths (4 still births 1 early neonatal death).

Conclusions: IUGR and preterm births are the most frequent perinatal complications in preeclamptic patients. Health education of masses and regular antenatal care can improve the pregnancy outcome.

Keywords: Preeclampsia, IUGR, Preterm birth.

INTRODUCTION

Preeclampsia is a complex multi system disorder which is characterized by metabolic changes, endothelial dysfunction, activation of coagulation cascade and increased inflammatory response[1.] Preeclampsia complicates approximately 6-8% of pregnancies [2] and is associated with adverse perinatal outcome as IUGR, small for gestational age, birth asphyxia, meconium aspiration syndrome, stillbirth, preterm delivery and early neonatal death. [3,4] Adverse infant outcome is predominately influenced by gestational age.[5] Iatrogenic prematurity is an important cause of high perinantal mortality and morbidity associated with preeelampsia.[6] We conducted a study to find out perinatal outcome in preeclamptic patients which is a common complication in our pregnant women.

MATERIALS AND METHODS

Patients admitted through the outpatient department and labour ward with gestation age >20 weeks and diasystolic blood pressure of ≥ 90mmHg on more than one occasion 6 hours apart and proteinuria ≥ 300mg/24 hours or two mid stream or catheter specimens of urine with ≥++ proteins on reagent strip testing were included in the study. Besides detailed clinical history, complete blood count, renal function tests, liver function tests, coagulation screen and 24 hours urine protein were done. After the baseline obstetrical ultrasound, two weekly growth scans were done, growth charts were maintained along with umbilical artery Doppler studies, Patients were counseled for planned hospital delivery and time and mode of delivery was decided. Babies were managed by the Pediatricians and if needed shifted to neonatal intensive care unit. The babies were followed for 7 days after birth.

RESULTS

Out of 73 patients of Preeclampsia, 28 (38.36%) patients were less than 20 years of age and 2 (2.73) were over 40 years of age (Table 1). 44(60.27%) patients were primigravidia and the rest were multigravida. Gestational age at the time of diagnosis of preeclampsia was noted. 11 (15.07%) patients had gestational age <34 weeks and 62 (84.93%) patients had gestational age greater than 34 weeks (Table 2). 22 (30.13%) had IUGR. 9 patients had IUGR at term and 13 patients had preterm IUGR. 10 preterm IUGR babies were admitted to neonatal intensive care unit. There were 4 still births, 3 among preterm and I term baby and 1 preterm early neonatal death. Overall 23 (31.50%) babies were born preterm (before 37 completed weeks) and 50 (68.49%) were born at term (table 3).

Table No. I: Age Distribution

Total No. of patients	73
Less than 20 years	28 (38.3%)
20-35 years	43 (58.9%)
40-45 years	2 (2.7%)

Table No.2:Gestational Age at the time of Diagnosis of Pre eclampsia

Less than 34 weeks	11(15.07%)
Greater than 34 weeks	62(84.93%)

Table No.3:Perinatal outcome

1. Intrauterina Grwoth Restriction (IUGR) a. Term IUGR Babies b. Preterm IUGR babies	22(30.13) 9(40.9%) 13(59%)
2. Total Preterm Births	23(31.50%)

DISCUSSIONS

Preeclampsia, a pregnancy specific syndrome of hypertension and proteinurea is one of the leading causes of perinatal morbidity and mortality[7]. Preeclampsia also puts the mother at the risk of complications and is responsible for about 60000 maternal deaths every year mainly in the poor countries[8]. In our study majority of the patients were young primigravidia which is in agreement with local and international literature.[9-12]

Gestational age is a variable that is the strongest predictor of fetal mortality and morbidity especially at less than 30 weeks of gestation.[13] In our study worst perinatal outcome was in babies <34 weeks of gestation with complications like IUGR and preterm birth.

CONCLUSION

Preeclampsia remains a major cause of maternal and perinatal morbidity and mortality, contributing to significant economic and health care burden. However, the pregnancy outcome can be improved with health education of masses; regular antenatal care, prompt diagnosis of high risk patients and timely referral to tertiary centers.

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Original Article

Early Spica Cast in Children Femoral Shaft Fractures

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ABSTRACT

Objective: To find out the advantages of early spica cast as a treatment for isolated, uncomplicated femoral shaft fracture in children.
Study Design: Descriptive Study.
Place and Duration of Study: This study was carried out in the Department of Orthopaedics, DHQ Hospital, Dera Ghazi Khan from April 2009 to December 2010.
Patients and Methods: A total of 30 patients were included in the study. All patients under the age of 12 years, who presented during the study period with femoral shaft fracture were included in the study.
Results: A total of 30 children with femoral fractures were treated with early spica cast. Age ranged from 2 year to 11 years. Male to female ratio was 2.75:1. Majority of children were under 5 years. In most of the children spica cast was applied on the day of presentation within few hours and were sent home on the same day. Twenty one children were followed till removal of spica cast. Period of immobilization in spica cast ranged from 4 weeks to 7 weeks with average of 5.73 weeks. Common problems related to spica cast were soakage and breakage of spica which occurred in 9(42.85%) children. At the time of cast removal shortening ranged from 0.5cm to 2.5 cm in 15 out of 21 (71.42%) children:
Conclusion: Early spica cast is simple, effective and definite method of treatment with minmal complications and acceptable results in paediatric age group. It allows rapid return of child to family environment, thus avoiding prolonged separation from parents.
K**ey Words**:- Children, Femoral shaft fractures, Hip spica

INTRODUCTION

Femoral shaft fractures in children are common and frequently require hospitalization[1,2]. Traditionally femoral shaft fractures in children have been treated by some form of initial traction followed by spica cast immobilization. It is reported that interest in use of immediate or early spica cast has increased[3]. The advantages of this approach are decreased hospital stay and cost of treatment, avoidance of complications of traction and surgical fixation and rapid return of patients to their families[4].
The problem with early spica cast treatment is shortening and deformity of limbs. Overgrowth of fractured limb and spontaneous correction of angulations at fracture site have been reported[5]. Perfect anatomical reduction is therefore not essential. Because of these characteristics in children, use of early spica cast seems to be an attractive treatment option. This study was conducted to establish the advantages of early spica cast as a treatment for isolated, uncomplicated femoral shaft fracture.

PATIENTS AND METHODS

This descriptive study was carried out in the Department of Orthopaedics, DHQ Hospital, Dera Ghazi Khan from April 2009 to December 2010. A total of 30 patients were included in the study. All patients under the age of 12 years, who presented during the study period with femoral shaft fracture were included in the study. Patients having compound fractures and those with associated injuries were excluded. All patients had radiological evaluation of the injury. They were prepared for spica cast under general anesthesia. Following recovery check x rays were taken to assess the reduction. Follow up done in outpatient clinic at weekly intervals for initial 3 weeks and then at longer intervals.

RESULTS

Thirty children with 30 femur shaft fractures who met criteria were enrolled for this study. The mean age of patients was 4.96 years, range 2 years to 11 years. There were 22 males and 8 females with M: F ratio of 2.75:1. (Table 1).
In majority of the patients the mode of injury was fall of object on patient i.e. 15 (50%) patients as shown in table-2.
Commonest problem with spica cast was soakage and breakage, which occurred in 9 out of 21 children (42.8%). Spica cast was reinforced in 6 (28.5%) children and changed in 2 (9.5%). None of the children required wedging. At the time of fracture healing i.e. at Femoral Shaft Fractures in Children Treated by eerly spica Cast removal of spica cast, shortening of fractured limb was seen in 15 out of 21 children. Shortening ranged from 0.5cm 2.5cm (table-3).
After removal of cast parents were asked to bring their child after one year with fresh x-ray. Only 5 children could be followed for longer duration. A Three years

child presented after 6 months with 2cm lengthening of injured limb. One child had 0.5cm shortening of injured limb, while three children had equal limbs at one year follow up. There was no limping or any functional problem. Clinically both limbs remained equal.

Table No.1: Age and Sex Distribution (n=30)

Age	Male	Female	Total
<5	12	8	20
>5	10	-	10
Total	22	8	30

Table No.2: Mode of Injury (n=30)

Mode of Injury	No. of patients	%age
Road accident	6	20.0
Fall of object on patient	15	50.0
Sports injury	5	17.0
Hit by animal	4	3.0

Table No.3: Shortening at the Time of Fracture Healing

Shortening	No. of patients	%age
05 cm	02	09.5
1 cm	06	28.5
1.5 cm	04	19.0
2	02	09.5
2.5	01	04.8

DISCUSSION

Treatment of femoral fractures in children is controversial. Many surgeons have been quoted to advocate surgical modalities such as compression plates, flexible nails, and external fixators[3].

Traditionally fractures in children are treated by initial traction for 3 to 4 weeks followed by hip spica cast till union occurs. Since the report in 1959 by Dameron and Thompson interest in use of early spica cast in the treatment of femoral shaft fracture in children has increased. Spica cast is simple, safe, effective and definitive method of treatment. It is cheap and associated with short hospital stay. The problem with early spica cast treatment is shortening and deformity of limb[6].

Results of present study are comparable with others[7]. Ali and Raza have treated 100 children, aged 2 year to 12 years, with closed unilateral femoral shaft fractures by two methods. A) Thomas splint and B) early hip spica cast, fifty children in each group[8]. They have compared results of two methods in terms of time of union, degree of shortening and angulations in coronal and sagittal plane and found no significant difference between the two groups.

Duration of stay in hospital was 3.68 ± 2.11 days in early hip spica cast group. Average shortening at 1 year in their study was 0.36 cm in group B. Results of our study are comparable. Spinner et al have treated 32 children with femur fracture over 7 year period by primary closed reduction and maintenance in double spica cast.

The hip and knee were flexed at 40 degree to 60°. They have removed sole of cast beneath the foot in all children in order to avoid shortening. Up to two centimeters of overriding, 30° of anterior angulation, and 15° of medial angulation were accepted. They have re-examined 75 children out of 85 for two to eighteen years after initial treatment. None of the children had any residual skeletal deformity or joint stiffness. The length discrepancies ranged from 1.7 cm of shortening to 0.9 cm of overgrowth of the fractured limb. Sugi and Cole have treated 191 children up to 10 years of age by early spica method[7]. They have included fractures of middle third of femur. They have kept knee and hip flexed at 40 degree to 60degre. They accepted up to 20mm of shortening 20° of anterior angulation and 15° of valgus angulation, but no posterior angulation or varus. Plaster under the sole of foot was removed so that planter flexion against it can not cause shortening as Irani et al did. 180 children were reviewed four and half to eight years later. Shortening at removal of cast was seen in all children of 9mm to 20mm (ranged from 0-10% of femoral length). At late review only seven children had from 6 to 13mm of shortening.

Angular malalignment was not seen at late review, while 13 children had 10-15° of medial rotation of the leg that was not noticed by parents or children. Nine children had complication due to spica, including pressure effects, malalignment of fracture and breakage of spica. In our patients we did not remove sole of cast underneath foot and found that shortening was not affected with presence of sole cast. In our patients shortening occurred in only 15 out of 21, as compared with all patients of Sugi and Cole at time of removal of spica. We do not have follow-up, therefore long term results can not be compared.

Most common problem was angulation which occurred in 3 (14.28%) out of 21 patients. Except in one patient angulation was within acceptable limits. Jamaluddin has prospectively studied 24 children aged 3 months to 10 years having femoral shaft fracture, treated by early spica cast. 5 He applied spica cast under sedation. Knee and hip were kept in 40-45 degrees of flexion. Foot part of cast was removed after about 3 to 4 weeks. The average hospital stay was 3.5 days. Shortening was the main problem and seen in all patients with an average of 15mm shortening at time of fracture union. Angulation was within acceptable limits in all patients. No complication related to spica cast was found.

In series of Ali and Raza duration of stay in hospital was 3.68 ± 2.11 days in early hip spica group, 11 while in series of Newton and Mubarak average hospital stay was 2.5 days[9]. The main concern in the treatment of femoral shaft fracture in children is shortening and deformity of the limb. In children, after fracture, femur grows at an increased rate. Overgrowth ranging from

1cm to 2.5cm has been reported by many authors[10,11,12]. This overgrowth phenomenon following femur fracture has allowed acceptance of shortening up to 2cm at time fracture healing. Moreover, shortening up to 6 to 13 mm is not noticeable. Growing children also have ability to remodel malunited fractures. Spontaneous correction of up to 25 degrees of angular deformity has been reported[13]. Though rotation deformity usually does not correct, but up to 25 degrees of rotation is well tolerated[14].

Complications related to spica cast are rare and insignificant. Nine out of 21 (42.85%) patients had soakage and breakage of spica, but only 2 required change of spica. None of patients needed wedging. Weiss et al have identified peroneal nerve palsy in 4 patients in a series of 110 paediatric femoral shaftfractures treated with early spica cast application[15]. All four had 90º/90º cast placed and underwent cast wedging for alignment. Peroneal nerve palsy occurred probably because of pressure on peroneal nerve while doing wedging. In our series no neurologic deficit was seen. This probably was because we kept hip and knee in neutral flexion and none of our patient underwent wedging of cast. Because of compensatory overgrowth and potential correction of angulation by remodeling process of fractures in children and minor complications related to spica cast, the use of early hip spica immobilization for the treatment of femoral fracture is an attractive alternate to the conventional method of treatment in children up to 11 years of age.

CONCLUSION

Early spica cast is simple, effective and definite method of treatment. Children up to 11 years of age can be safely treated with early spica cast. Early spica cast allows rapid return of child to family environment, thus avoiding prolonged separation from parents. Early spica cast also avoids complications related to traction and operative treatment methods.

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Original Article

Unruptured Ectopic Pregnancy is Still Uncommon in Our Setup

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ABSTRACT

Objective: To analyze the frequency of ectopic pregnancy, treatment modalities, maternal outcome and why the unruptured ectopic pregnancy is presented less frequently in our set up.

Study Design: Cross sectional descriptive study.

Setting and Duration: This study was conducted at the Department of OBGYN PUMHS Nawabshah from January 2008 to December 2010.

Materials and Methods: All the patients who have a clinical suspicion for ectopic pregnancy or diagnosed by ultrasonography included in the study. Verbal interviews were taken in the post operative period for assessment of educational and socio economic status of patient along with the behavior of the referring authority. Patients' records were reviewed for clinico surgical finding and maternal outcome.

Results: Eighty eight (88) women were presented with ectopic pregnancy out of 13286 deliveries at PUMHS Hospital Nawabshah during 03 years study period making a frequency of 0.66%. No risk factor identified in 58(65.9%) of cases. 56(63.63%) patients presented in acute way. Regarding treatment modalities 86(97.72%) patients underwent laparotomy amongst them salpingectomy was performed in 50(56.81%), salpingo-oophorectomy in 28(31.81%), milking of tube were carried out in 03(3.40%) patients and complete tubal abortion was found in 05(5.86%) patients. 02 patients with unruptured ectopic pregnancy were selected for medical treatment, 01 was successful and other failed and treated by salpingectomy. Maternal outcome was satisfactory; no maternal death was found in the study group. Blood transfusion was required in 100% of patients (1-4 pints).

Regarding the aspect of why we are not receiving the patients with unruptured ectopic pregnancy, we found that > 90% of our patients belong to poor socioeconomic group and uneducated. Remaining patients belong to middle social class and were able to write their name. We found it an important factor in starting late antenatal care. We also assessed the behavior of referring authority as well as in our out- patient department; urine for the P.T was the preferable method of diagnosing first trimester pregnancy. Ultrasound was only advocated once patients presented with acute symptoms of ectopic pregnancy.

Conclusion: The detection of unruptured ectopic pregnancy is almost nil in our setup due to late reporting to hospital by women when pregnant and inability of the health care providers to suspect it when faced with early pregnancy problems of lower abdominal pain and irregular vaginal bleeding. A change in the health professional behavior, provision of β HCG estimation and transvaginal ultrasound in public sector hospitals are the modalities to improve the detection of unruptured ectopic pregnancy.

Key Words: Ectopic pregnancy, unruptured, detection, behavior of care providers, health education.

INTRODUCTION

Ectopic pregnancy is an implantation of fertilized ovum at sites other than normal endometrial cavity[1]. It is a potentially life and fertility threatening complication of pregnancy, need an urgent intervention to save the maternal life.

Its incidence is increasing worldwide, most probably due to advanced diagnostic modalities[2,3,4,5] increasing incidence of PID[6] and increase use of fertility assisted techniques[6,7]. In developing countries the incidence varies from 1 in 44 deliveries to 1 in 22 deliveries[8], while in developed countries it varies between 1:233 to 1:280 deliveries[9].

In Pakistan the incidence varies between1:112 to 1:130 pregnancies[10], but the real figure could be much higher due to poverty, lack of health education, under reporting and poor communicating setup between the health care providers. The ultimate result is the late presentation of the patient and radical surgeries with significant impairment of women fertility and increase risk of future ectopic pregnancy.

Fallopian tube is the site of involvement in > 95% cases, rarely there is involvement of ovary, broad ligament, uterine cornu, cervix and the pelvic cavity[7,11]. Heterotropic pregnancy, although rare in spontaneous conception (1:25000--30000) can be seen up to 3% of pregnancies resulted from assisted reproduction[1,6,7].

Despite the relatively high frequency of ectopic pregnancy, clinical diagnoses can be challenging due to varied clinical presentation(70-80% with sub acute and <25% with acute ruptured ectopic pregnancy). A high index of clinical suspicion, transvaginal ultrasonography, serial β-HCG assessment and laparoscopy play a vital role in the diagnosis of ectopic pregnancy. In developed countries, use of advanced

modalities results in detection rate of unruptured ectopic pregnancy up to 88-100%[2,3] which is extremely important in preserving woman's fertility.

Management options for ectopic pregnancy range from clinical observation, methotrexate to conservative and radical surgeries. Inspite of increasing incidence, case fatality rate from ectopic pregnancy is decreasing by 90% from 1979 to 1992 but still it is a leading cause of maternal mortality in first trimester of pregnancy, with a mortality rate of 9-14%[7,10,11].

Advances in the management of ectopic pregnancy are now focuses not only on saving the maternal life but also save the woman fertility and minimize the risk of future ectopic.

This study was conducted in the Department of OBGYN at PUMHS Hospital Nawabshah to evaluate:

1) The frequency of ectopic pregnancy.
2) Clinical presentation, treatment modalities and maternal outcome.
3) Why the detection rate of unruptured ectopic pregnancy is uncommon in our setup.

MATERIALS AND METHODS

A cross sectional descriptive study was conducted in the Department of OBGYN at PUMHS Nawabshah during three years period from January 2008 to December 2010.

All the patients who had a clinical suspicion for ectopic pregnancy or diagnosed by ultrasonography included in the study. Written informed consent was taken. The information recorded on a proforma including age, parity, presenting symptoms, associated risk factors, complete clinical examination, awareness of pregnancy, socioeconomic and educational status of patient, referring health facility and management strategy.

According to set inclusion criteria, patients who were stable and diagnosed as unruptured ectopic pregnancy received medical treatment (methotrexate). Patients presented with acute abdomen and hypovolumic shock were immediately resuscitated and treated by laparotomy. salpingectomy and salpingo-oophorectomy were the preferred approach, mostly due to bad tubal rupture and formation of tubo ovarian masses.

Outcome measured were frequency of ectopic pregnancy out of total number of deliveries, maternal outcome and why the detection rate of unruptured ectopic pregnancy is uncommon in our setup.

RESULTS

Eighty eight women were presented with ectopic pregnancy out of 13286 deliveries at PUMHS hospital Nawabshah during 03 years study period making a proportion of 0.66%.

Mean age of women was 27.30±5.86, while the range was from 15 to 42 years. Mean parity was 3.05±1.76; minimum parity was 0 while 06 was maximum parity. No risk factor identified in 65.90% patients. Risk factor identified were PID in 08(9.09%), infertility in 07 (7.9%), previous pelvic surgeries in 06(6.8%), ovulation induction in 05(5.68%), IUCD in 02(2.27%) and previous history of ectopic pregnancy in 02(2.27%) women. Majority of patients (63.63%) presented in acute emergency with symptoms of abdominal pain in all 88(100%), amenorrhea in 81(92.04%), abdominal distention in 52(59.09%), vaginal bleeding in 39(44.31%), fainting attacks in 30(34.09%), early pregnancy symptoms in 33(37.5%), dyspareunea in 07(7.95%) and history of D&C induced abortion in 05(5.68%) patients. Clinical signs found were tachycardia in 75(85.22%), hypotension in 60(68.18%), abdominal tenderness in 82(93.18%), adenexal tenderness in 65(73.86%), adenexal mass in 32(36.36%) and cervical excitation was positive in 61 (69.31%) patients.

Regarding treatment modalities, laparotomy was performed in 86(97.72%), amongst them salpingectomy in 50(56.81%), salpingo-oophorectomy in 28(31.81%), milking of tube in 03(3.40%) and complete tubal abortion was found in 05(5.86%) patients. 02 patients with unruptured ectopic pregnancy received methotrexate, 01 gave response and the other failed underwent laparotomy and salpingectomy. Regarding maternal outcome no maternal death was found in the study group. Blood transfusion was required in 100% of patients (1-4 pints).

Table No.1: Clinical Presentation

Clinical presentation	No. of patients (n=88)	Frequency
Acute	56	63.63%
Sub acute/chronic	32	36.36%

Table No.2: Clinical Features

Symptoms	Number (n)
Abdominal Pain	88(100%)
Amenorrhea	81(92.04%)
Abdominal Distention	52(59.09%)
Viginal Bleeding	39(44.31%)
Fainting Attacks	30(34.09%)
Nausea	33(37.5%)
New Onset Dyspareunea	07(7.95%)
Signs	**Number (n)**
Tachycardia	75(85.22%)
Hypotension	60(68.18%)
Abdominal Tenderness	82(93.18%)
Cervical Excitation	61(69.31%)
Adenexal Tenderness	65(73.86%)
Adenexal Mass	32(36.36%)

Regarding the aspect of why we are not receiving the patients with unruptured ectopic pregnancy, we took verbal interviews to assess the educational and the socioeconomic status of our patients. We found that > 90% of our patients belong to poor socioeconomic group and uneducated. Remaining patients belong to

middle class and able to write their name. We found it an important factor in starting late antenatal care.

In this regard, we also assessed the behavior of referring authority as well as our outpatient department; urine for the P.T was the preferable method of diagnosing first trimester pregnancy. Ultrasound was only advocated once patients presented with acute symptoms of ectopic pregnancy.

Data has been analyzed by using SPSS version-10 on computer. Descriptive statistics like frequency, percentage, average, etc, were being computed for data presentation. Statistical test of significance was not be applicable for this descriptive study.

Table No.3:Management Protocol

Management	No. of patients	Frequency
Medical (Methotrexate)	02	2.27%
Salpingectomy	50	56.81%
Salpigoopherectomy	28	31.81%
Milking of fallopian tube	03	3.40%

DISCUSSION

Ectopic pregnancy is still a leading cause of maternal morbidity and mortality worldwide. The frequency of ectopic pregnancy in the current study was 6.6/1000 birth, almost consistent with 5.7/1000 by Ehsan-N[12] and 5.1/1000 by M-Rohi[13] studies. The reported incidence is quite high in advanced world[7,14] , most probably due to the use of advance diagnostic modalities with well established health care system like EPU (Early pregnancy Units).

The lower mean age and parity in the current and other studies[8,15,16], imply that all efforts should be made to detect ectopic pregnancy in the unruptured state to enhance the aspect of successful future pregnancies.

Majority of our patients (97.72%) presented with ruptured ectopic pregnancy required emergency laparotomy which is a trend in most of studies[15,16,17,18] . It also avoids the need of prolong follow up which is not feasible in our setup. RCOG guidelines also favour the use laparotomy for haemodynamically unstable patients[19]. However laparotomy was only performed in 58% cases in a study by Mehboob and Mazhar[10] which is quite low as compared to current study.

No identifiable risk factor found in 65.9% of patients, probably it could be subclinical infection which damaged the endosalpinx and put the studied population at risk of ectopic pregnancy.

The preferable mode of treatment was salpingectomy in 56.8% and salpingo-oophorectomy in 31.81% due to tubal rupture and formation of TO masses as in other studies[12,13,15,16] . Although laparotomy and salpingectomy give a 100% success rate but at the same time, compromise patient's fertility and increase the risk of future ectopic pregnancy[7]. Current study showed no maternal death which might indicate an urgent laparotomy once the patient arrived in the hospital. The under lying fact could be many maternal deaths which go unnoticed because of illiteracy or failure of attending physician to diagnose the problem due to variable presentation.

The rate of unruptured ectopic pregnancy is very low (2.2%) as compared to developed countries[20,21]. Developed countries have better socioeconomic circumstances with better women literacy, provision of EPU and screening/treatment of STD play a vital role in reducing the incidence of ectopic pregnancy and its ruptured state. The low resource setup in Pakistan with illiteracy needs a well planed health education program for both community and health providers. In the current study, although 50% of the women were aware of the pregnancy, didn't communicate with any health facility till they developed the complications. Inspite of having the facility of ultrasound, urine for PT was used for diagnosis of first trimester pregnancy in those who attended the hospital. The health care provider must be aware of the tried of the ammenorrhoea, lower abdominal pain and vaginal bleeding in ectopic pregnancy. It is the high index of suspicion which safeguards the women against misdiagnosis and inappropriate treatment.

Early diagnosis of ectopic pregnancy in the unruptured state favours conservative[19], medical[21,22] and laparoscopic[23,24] management as well as avoids the risk of blood transfusion with its consequences.

CONCLUSION

The detection rate of unruptured ectopic pregnancy was very low at PUMHS hospital mainly due to late reporting to hospital and the poor behavior of attending physician for using appropriate diagnostic tool. A well established health education program for community, CME for doctors along with the provision of serum β HCG estimation and high resolution ultrasound with well trained sonologist are the need of emerging trend.

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